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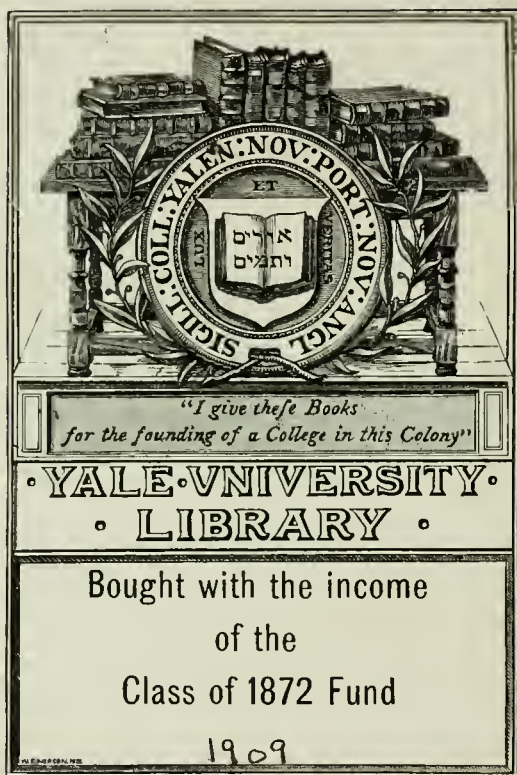
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TUBERCULOSIS

IL-ORGANISATION AND EQUIPMENT

EDITED BY

THE COUNTESS  
OF ABERDEEN



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IRELAND'S CRUSADE AGAINST  
TUBERCULOSIS









SHELTERS AT TUBERCULOSIS EXHIBITION, HERBERT PARK, DUBLIN, 1907.



# IRELAND'S CRUSADE AGAINST TUBERCULOSIS

Being a Series of Lectures delivered at the  
Tuberculosis Exhibition, 1907, under the  
Auspices of the Women's National Health  
Association of Ireland

EDITED BY

THE COUNTESS OF ABERDEEN *President*

*Women's National Health Association  
of Ireland*

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## PREFACE

THE reception accorded to the first of the volumes published by the Women's National Health Association, describing the reasons for a crusade against tuberculosis in Ireland, has been most gratifying and encouraging. The second volume of the series is now presented to the public, and bears especially on various aspects of the *sanatorium and dispensary* treatment of the disease as presented by lecturers who have made a special personal study of this important side of the question.

The matter is one of great urgency in Ireland. Her people have joined in the campaign against their foe most enthusiastically. They are alive to the dangers of the disease, and realise how clamant is the need for suitable provision to be made for sufferers in the advanced stages in institutions where they can be cared for, and can at the same time be freed from the fear of being a source of danger to their families. That is the first need, and the second is almost as imperatively required in the form of sanatoria, where patients in the early stages can be taken in soon enough and kept long enough to give a real chance of permanent cure. Those who have followed the Tuberculosis Exhibition in its travels through Ireland have but too sad reason to know of the numberless cases waiting—waiting for a chance of admission to Newcastle or to one or other of the very few sanatoria for consumption now existing in Ireland—waiting until, when the order for admission is received, it is often too late.

There are many different views about sanatoria and the benefits that they confer; but on one point all the authorities are now agreed—that is, that costly and permanent buildings are always to be condemned as being most inappropriate for their purpose.

Some of the papers in this volume explain why this is

the case, and demonstrate the results obtainable in well-designed and well-managed institutions so convincingly that we trust their arguments may induce local authorities to take the necessary steps for providing the requisite buildings at as early a date as possible, for we are sure that public opinion will support them in this policy.

We are all hoping that the forthcoming Tuberculosis Bill will give most valuable facilities in the direction desired, and we are also hoping that a measure dealing with the recommendation of the Royal Commission and of the Vice-regal Commission on the Poor Laws may bring great cheer to all our crusaders. But, meanwhile, we cannot remain idle; and this volume also contains lectures pointing out the benefits obtained by the establishment of special Tuberculosis Dispensaries, together with a system of nurses and health visitors, in Scotland, in Germany, in New York, and elsewhere. These seem to indicate the lines we must try to follow. Already a very hopeful experiment in this direction is being made in Dublin to reach tuberculosis sufferers in their own homes with a message of hope and cheer, and the report of the first three months' work recorded at the end of this volume will encourage others who are commencing on the same lines in other parts of Ireland. We are dreaming and watching for the advent of Erin's fairy god-mothers who will supply her with means wherewith to deliver her children from the jaws of the devouring dragon. But whilst we are dreaming, and whilst local authorities and the Treasury seek for the necessary funds which are so difficult to find, the present generation of sufferers is passing away and new victims are being prepared.

It must, therefore, be the earnest and sustained aim of the newly-formed Women's National Health Associations scattered over the country, and of all who have had the opportunity of realising the deep interest manifested in this question by all sections of the people of Ireland, to guide and keep alive this movement in the homes and hearts of the people, so that it may, by its unanimity and

its strength, obtain the sanitary reforms in houses, in schools, in food supplies, in cookery and home management, which lie at the root of the question, as well as the curative agencies with which this book chiefly deals.

We believe that the truest way of obtaining our aim is by the ripening of public opinion on all these points, and this can most surely be done effectively by educative influences brought to bear on the mothers of Ireland and by the practical home work carried on by district nurses, acting under medical supervision and supported by wise and generous committees and helpers. Such means may seem homely and simple, but they are none the less powerful, and we rejoice to think that to the women of Ireland is given at this time an unique opportunity of stepping into the breach and of saving their country.

ISHBEL ABERDEEN,

*President of Women's National Health  
• Association of Ireland.*





# THE CLIMATE OF IRELAND IN RELATION TO THE OPEN-AIR TREATMENT OF CONSUMPTION

By DR. J. C. SMYTH, Medical Superintendent,  
Altadore Sanatorium, Co. Wicklow.

MR. WM M. MURPHY, J.P., in the Chair.

MR. MURPHY: I am here to-day at the request of her Excellency the Countess of Aberdeen, who asked me to apologise to you for her absence. She has been most unremitting in her attendance at these meetings and these lectures ever since the opening of the Tuberculosis Exhibition. But she is away, as you all know, in Belfast, and while she is away she is not forgetful of the most important work in which we are here engaged; and she has been spreading the light in Belfast and establishing a branch of the Women's National Health Association there. If Lady Aberdeen is not here in person she is with you in spirit, and only a little while ago Dr. Boyd told me that he had received a telephone message from her Excellency regretting her absence. The subject of the climate of Ireland in relation to the open-air treatment of consumption will, I am sure, be treated by Dr. Smyth in an exhaustive and able manner. I had the pleasure of being present here on the occasion of the inauguration of this Exhibition, when the very eminent Professor Osler told

us what seemed to be news to most people at the time—that the climate of Ireland, though very much abused, was an excellent climate, and not one at all where this fell disease was encouraged more than in any other climate in the world. I have now pleasure in introducing Dr. Smyth, who will deliver his lecture.

DR. SMYTH said: Mr. Chairman, ladies and gentlemen, I have chosen this subject for my lecture this afternoon because I believe that a great majority of people, and especially Irish people, believe that the climate of this country is largely to blame for its high death-rate from tuberculosis, and that it is, therefore, hopeless to try to cure consumption in Ireland. This belief, I hope to show you, has no real basis in fact. Irish tuberculous patients can be treated in Ireland and cured in Ireland, and that as quickly, as thoroughly, and as permanently as in any other country, and with this great advantage—that they are cured in the climate in which they have lived, and in which they have afterwards to live. I have no hesitation in saying that the first lesson we have to impress on our countrymen and women is that it is *not* the climate of Ireland, but the people themselves, who are to blame for the prevalence of consumption in our midst.

Before entering into detail upon my reasons for this belief I will, with your permission, give a brief *résumé* of the climatic treatment of consumption down to the present day. Consumption has been a well-recognised disease for at least two thousand five hundred years, but it is only within quite recent times that it has come to be regarded as curable. Hippocrates and his followers—the celebrated Galen among them—believed in the natural tendency of the human body to recover from disease if proper care were taken of it, and in no particular disease has the truth of this doctrine been so strikingly exemplified as in tuberculosis. We find one factor paramount in all the various forms of climatic treatment of consumption, and

that is—*fresh air*. For a time Madeira had a vogue as a place where consumptive patients were benefited; then sea voyages became fashionable. At another time the leading lights of the medical profession sent all their tuberculous patients to the South of France, or perhaps to Egypt or Algeria. There is no doubt that a small proportion of cases recovered, or were at all events benefited by their change to warmer climes, and their restoration to health was ascribed to the warmth or dryness of the climate to which they had been sent, whereas in reality *fresh air* had worked the miracle. The climate being warmer than that to which they were accustomed, patients voluntarily spent their time out of doors instead of living in close, ill-ventilated rooms, secure from that old-fashioned bogey—draughts!

In 1859 Dr. Brehmer, of Goerbersdorf, in Prussia, initiated the so-called open-air cure, and twenty years later Dr. Dettweiler followed his example, Dr. Otto Walther, of Nordrach, finally perfecting the system, and bringing it to the notice of English-speaking people. It was still some considerable time—several years in fact—before an English doctor started the first sanatorium for the open-air treatment of consumption in England, at a spot about fourteen miles from the place where I was then practising my profession. His success was so great that others quickly followed in his steps, and there are now about one hundred sanatoria in Great Britain, with beds for four thousand patients.

Having shown that fresh air is one of the principal factors in the successful treatment of consumption, let us proceed to examine the charges against this much-abused climate of ours, and to show that, after all, it does not deserve the obloquy which it has become the fashion to bestow on it. The Irish climate is, I fear, the proverbial dog with a bad name, and we ought to do our best to rehabilitate it and to hold up our head among the nations on the score of our climate as well as of many other perfections.

I think you will agree with me that the principal

charge against the Irish climate is its humidity. One is accustomed to hear it described as "so fearfully damp, don't you know—far worse than England or Scotland!"

Now, let us compare the rainfalls of Ireland, England and Scotland, and we shall soon see that the popular idea on the subject is far from correct. I will quote statistics from the latest volume of "British Rainfalls," giving the results of observations taken in 1906. In one table the author has selected seventy-three stations to represent the different localities of England, Ireland and Scotland, and the mean rainfall works out as follows:—

England and Wales	36½ in.	99 per cent.
Scotland	48½ „	108 „
Ireland	39½ „	95 „

That is to say, the rainfall of Ireland was only 3 inches greater than that of England and Wales, and actually 9 inches *less* than that of Scotland; and this despite the fact that a number of the selected stations in Ireland were near the west coast, where the rainfall is highest.

Again, the highest rainfall in the United Kingdom last year was at Snowdon, where 205 inches were registered, and the lowest at Spurn Head, with 19 inches. Now, remark how very low down in the scale Dublin comes with 22 inches, Kingstown with 20 and Killiney with 22. I looked up the thirty years' average for Dublin, and I found it was 27.7.

It is interesting to compare the rainfalls of some of the large towns of England and Scotland with that of Irish towns. I will give you the averages, all over ten and most of them thirty years:—

London	25 in.	Waterford	35 in.
Edinburgh	- 26 „	Glasgow	38 „
Dublin	- 27.7 „	Cork & Galway	38 „
Liverpool	30 „	Penzance	41 „
Manchester	30 „	Eastbourne	31 „
Belfast	33 „	Cardiff	- 40 „
Armagh	31 „		

These figures will, I think, show you how Ireland is not nearly so wet a country as is generally supposed. But even if the popular idea were correct, and Ireland

the dampest of the three countries under discussion, that fact would not render it unsuitable for sanatorium treatment of consumption. Rainfall has no unfavourable effect on the death-rate from tuberculosis. Connemara, with the highest rainfall in Ireland, has the lowest death-rate from consumption. Dublin, on the other hand, with the highest death-rate from consumption, has the lowest rainfall in Ireland, or practically the lowest; Killiney and Kingstown, I believe, are sometimes lower.

Before I leave this branch of my subject I will read you a few of the rainfalls taken at or near sanatoria in Ireland, England and Scotland:—

Midhurst, the site of the famous King Edward VII. Sanatorium, quite the finest in the kingdom, has a rainfall of 39 inches.

Frimley, the place chosen by the London doctors for the sanatorium in connection with the Brompton Hospital for the Diseases of the Chest, has  $31\frac{1}{2}$ .

Blagdon, in Somerset, where is situated the first open-air sanatorium started in England,  $44\frac{1}{2}$ .

Ventnor, 32.

Bournemouth, 30 to  $32\frac{1}{2}$ .

Chagford, Devon, near which there are several sanatoria,  $47\frac{1}{2}$ .

Banchory, in Aberdeenshire, nearly 37.

The National Hospital for Consumption at Newcastle, County Wicklow,  $27\frac{1}{2}$ .

Warrenpoint, 31.

Altadore, in 1902,  $28\frac{1}{2}$ ; in 1903,  $31\frac{1}{2}$ .

You will remark that the Irish sanatoria have the lowest rainfalls of all.

I think that the high rainfalls at these—some of the most noted of English and Scotch sanatoria show us that over there doctors are not afraid of rain for their consumptive patients. And the same remark applies to many of the German sanatoria, whose success led to the inauguration of similar institutions all over England and Scotland. For instance, at Nordrach, in the Black Forest, which, to English and Irish people, is one of the best known of the German sanatoria, I have seen a

thick fog hang over the place for a whole week at a time without clearing. You could not see fifty yards, and the snow often lies on the ground for months. It is much colder in winter and warmer in summer than with us, and yet the results obtained are far better than at many other Continental health resorts for consumptives, where the open-air treatment is not so strictly carried out, but where the climatic conditions are more agreeable.

When in Cork three years ago looking at sites for the County Sanatorium about to be built, I wrote to a number of the leading sanatorium doctors in England and Germany on the subject of climate, and they almost without exception agreed in saying that rainfall had not materially affected their success in the treatment of this disease.

Another objection lodged against our climate is that its changeableness conduces to colds, and that colds lay the foundation of consumption. Now, "cold," or catarrh, is due to a microbe which infests our towns and villages, and it is only by infection it can be conveyed. Open-air and the "cold" microbe are deadly enemies of each other; consequently, in airy, open places infection is unlikely to occur, and in the open country it is practically unknown. We all know how we may get wet with impunity when fishing or shooting, but in towns, where people shut themselves up and live in close, unhealthy atmospheres, colds are very common. In the sanatorium we hardly ever see a cold, and when one does occur it can always be traced to some visitor who has brought it and has been in close contact with the patient. Again, people living in the open air get rid of colds far more quickly than those confined to closed-up rooms. Passing through Dublin I have often noticed that from one end to another of a whole street there is not a single open window to be seen. Small wonder that Dublin houses offer a happy hunting-ground to the microbes of catarrh and consumption! To sum up, then, it is not the climate which conduces to catarrh, but the habit of living in closed-up rooms and of existing on a minimum of fresh air.



Having dealt with some of its supposed drawbacks, I will now proceed to show you that the Irish climate has decided advantages of its own.

The temperature of Ireland is admitted to be much more equable than that of any other European country. This is shown by the smaller deviations as between day and night and summer and winter temperatures. This evenness of temperature is due to the fact that our country is surrounded by the sea, which is much more retentive of its heat than the atmosphere, because of its greater density. In winter, the sea slowly gives off this heat to the atmosphere, which is usually colder than itself. In summer, on the other hand, it slowly cools the air, which at that season is warmer than the sea. The Gulf Stream, too, plays a most important part in raising the temperature of our seas, and Ireland is more benefited by it than either England or Scotland.

Here I may quote the words of Sir John Moore on this subject in his work on "The Climates and Baths of Great Britain and Ireland." He says—

"The temperature of the sea which washes the Irish shores has a far-reaching influence upon the climate of this country. In January we find a mean sea-temperature as high as 44.6 at Cleggan, Co. Galway, and even at the Kish Lightship, nine miles off Kingstown Harbour, it is 44, compared with 37 at Yarmouth and Berwick. In July, on the contrary, the mean sea-temperature at the Kish Lightship is 56.3, or 4 below the mean temperature of the air in Dublin (60.3). From these figures it is clear that the proximity of the sea is a source of warmth in winter and of coolness in summer."

Ocean air is admitted to be the purest air—that is, the freest from all germs of disease—and it also has the advantage of containing the greatest proportion of ozone. Ozone is a form of oxygen, and is nature's most powerful vitaliser. Ireland has the ocean on three sides of her; consequently, Irish air ought for purity to compare favourably with any. Mountain air is next in purity to

sea air, and a combination of the two the best obtainable on land. Now, Ireland is particularly blessed in the fact that there are mountains on or near the coast line on almost all her borders. Wicklow, Wexford, Waterford, South Tipperary, West Cork, Kerry, Clare, Connemara, Mayo, Sligo, Donegal, Antrim, and Down, all have their mountains more or less near the sea.

I have not had time to go properly into the subject of sunshine in relation to our climate, and published statistics are very meagre. Sunshine certainly makes patients more cheerful, and life more pleasant. In Ireland there are a greater number of rainy days than in England, and consequently less sunshiny ones; but patients actually do better in the sanatorium in winter than in summer.

Although sunshine is very good as a disinfectant—and I think we have enough sunshiny days to disinfect our homes—I very much doubt, I think it is highly improbable, that sunshine has any direct effect on the microbes inside the human body except the indirect effect of making the patients more cheerful.

That the climate of Ireland is not unhealthy I think I have clearly demonstrated, and in further proof of this I would draw your attention to the fact that Irish-bred and Irish-reared cattle have a wide reputation for healthiness. It is an acknowledged fact that there is much less tuberculosis amongst them than in the cattle of England or Scotland. In many parts of Scotland the cattle are housed all the year round. This condition prevails in England, too, though to a less extent; whereas in Ireland we house some of our cattle in winter only, and very many are not housed at all. Now, tuberculosis in cattle is very common in Scotland, less so in England, and least of all in Ireland. What a contrast to the relative prevalence of tuberculosis among our human population! The reason for the healthiness of Irish cattle has, I am sure, already suggested itself to you—*fresh* air! and *Irish* air! This is a striking object-lesson, and should do much to persuade those who

would belittle it that our climate has nothing to do with the prevalence of human tuberculosis.

Ireland has, in fact, a climate which is perhaps the best in Europe from the standpoint of healthiness. Sir John Moore, in a paper read before the Royal Sanitary Institute, says :—

“Speaking of climate in general, and the climate of Ireland in particular, I may frankly state that the latter is probably the most temperate climate in the world, as it is certainly the most conducive to health and longevity.”

Until about ten years ago it was not generally believed in England, even amongst the medical profession, that consumption could be treated successfully in the English climate, and I well remember being taught, as a student, that if a patient were too poor to go abroad there was no hope for him. About ten years ago I went to Davos to see for myself what was being done there in the direction of curing consumption, and thence I went on to Nordrach, in the Black Forest. The difference in results in favour of Nordrach was simply astonishing, and this in spite of the fact that Davos was the place then in vogue, and to which patients were sent from all over Europe. I may say that in those days the Davos patients did not go out any more than they liked. They lived indoors, and did not lead at all the healthy lives that they live nowadays. Davos is very much changed in that respect. We have now copied in Ireland Dr. Walther's methods as carried out at Nordrach, and we claim that our results are as good, and with certain advantages in our favour. Our patients have not to undertake the fatigue of a long journey—it is 1,300 miles from Dublin to Nordrach—they are nearer their friends and home, and they can have the kind of food to which they have been accustomed. A Nordrach patient will appreciate that. But I will not go into that. A celebrated French authority—Dr. Leon Petit—says :—

“We are now convinced that there is no climate,

however favoured, which can alone cure consumption.” And Dr. Walthers, in his well-known work on Sanatoria for Consumptives, endorses the view I have endeavoured to put before you in the following words :—

“Neither high altitudes, dry atmosphere, fine weather, equable temperature, nor abundant sunshine is essential to success, however useful they may be or desirable in particular cases. Were high altitude an essential, we should not hear of recoveries on the ocean or in low-lying health resorts. Were fine weather a *sine qua non* the remarkable success of the sanatoria in the Black Forest and other parts of Germany would never have been chronicled. Many of them have a moist and chilly climate during part of the year, but the patients do just as well at such seasons as during fine weather. Indeed, the results are if anything better in winter, and many competent observers now regard weather as of little importance.”

And again :—

“Of greater importance than the climate is the use that is made of it. Consumptives have been cured in the most unlikely climates, and many things point to the conclusion that it is fresh air and medical supervision rather than a fine climate which are needed for success.”

Sir Douglas Powell, one of the first authorities in London on tuberculosis of the lungs, says :—

“Notwithstanding the enthusiasm with which cold mountain climates have been of late years advocated for the treatment of consumption, it remains certain that these resorts are not adapted for the majority of patients as they come before us suffering from this disease; and it might with truth be said that a large number of the very cases which do well aloft would do equally well in the plains.”

I believe that the primary cause of the terrible prevalence of consumption in Ireland is the fact that our people live in overcrowded, often dirty, houses, from which fresh air is rigidly excluded. The microbes of

consumption are harboured—one might almost say fostered and encouraged—within the four walls of the dwelling, and transmitted with fatal rapidity from one victim to another. The maxim I would impress on Irish people, especially on those compelled to live in small cottages, is—"Do nothing indoors which can possibly be done out of doors, and always keep your windows open."

An open-air life is the key-note of sanatorium treatment. The patient, instead of being in a carefully-warmed room, ventilated from other parts of the house, according to the popular old-fashioned idea, lives in the open air day and night at all seasons and in all weathers. I don't say we don't give them a roof over their heads—we do; but we give them sufficient ventilation. Lack of fresh air is the greatest predisposing cause of consumption, fresh air is the most potent means of restoring the patient to health.

This prescription may be more pleasant to carry out in dry, warm climates, such as Colorado, South Africa, or Egypt, but it is really just as easily applied in a relatively damp climate such as our own or that of England or the Black Forest. When a patient is constantly in the open air he gets quite accustomed to it, and even in winter becomes gradually so inured to the cold that he does not mind it. But let him sit for an hour at a fire in a warm room and he will feel the cold terribly when he goes out to resume his treatment. At the same time, I would not impose *unnecessary* hardships, and at a sanatorium the open-air life is made as tolerable as possible in winter by the choice of a sheltered site, by means of specially devised shelters, verandahs, &c., while the use of warm clothing, rugs, wraps, &c., is encouraged.

I trust I have succeeded in showing that our climate is admirably adapted for the open-air treatment of consumption. I have endeavoured to prove that it is, at all events, by no means inferior to that of England, while it is far better than that of Scotland; and sanatoria in

Ireland are doing work which compares favourably with anything they can show us across the water.

In conclusion, I must thank you all, ladies and gentlemen, for the kind attention you have accorded me, and express the hope that I have not unduly wearied you by what I feel to be a very inadequate statement of a case which deserves a better exponent than I can ever hope to be.

If I had made more time, and had not been afraid of trying your patience too long, I could have gone into a hundred side issues, all of which would have some bearing on the case. But I hope you will find something in what I have said to take home and digest.

SIR CHARLES CAMERON moved, and MRS. RUSHTON seconded, a vote of thanks.

THE CHAIRMAN, in putting the resolution, said: Ladies and gentlemen, it affords me very great pleasure to put this resolution of thanks to the meeting, and I would like to say a word or two to express the comfort that one feels in hearing that the idea that this climate is unsuitable for consumption—that consumption cannot be easily cured here—is a mere fallacy. It is a fallacy which has long survived; but such an authority as that which Dr. Smyth brings to bear upon a question of this kind will, I hope, satisfy us that Ireland has quite as good a climate as any other country for the cure of this dread disease. It is a great comfort to us to know that when our friends are suffering from this affliction they can, by taking proper precaution, be quite cured and restored to health at home without travelling abroad. As a layman I have had a very limited experience of two notable cases of cure in this country—cases of my own employees. I sent one to a sanatorium and he came back quite cured, and he is now living and doing well after three years. In another case the man was so bad that they thought they would not take him into a sanatorium. But with a little influence I got him taken into

Newcastle Sanatorium. He got quite cured, and is now living and working and doing well. These are rather extreme cases. My experience is extremely limited as compared with what the experience of a professional man—a man of experience in the medical profession—would be ; but even in my limited experience I have had two notable cases of that kind. It has been the fashion with people to say that the climate of this country is not suitable for the cure of this disease, but that idea has been entirely set aside by such information as Dr. Smyth has so ably imparted to-day in his instructive lecture. I have now great pleasure in putting the vote of thanks, and I feel bound to assume that it will be carried with acclamation.



DISCHARGED DURING	OF EACH HUNDRED OF THESE, THERE WERE, AT THE BEGINNING OF 1905,										REMARKS. THESE PATIENTS HAD TO RETURN AGAIN FOR TREATMENT.		
	ABLE TO WORK	NOT ABLE TO WORK	DEAD	NOT TRACED									
<b>1900.</b> Stage I ■ 149 .. II □ 137 .. III ■ 242 <b>TOTAL 528</b>	85	63	21	6	13	9	7	23	69	2	1	1	Stage I. 28 .. II. 23 .. III. 7
<b>1901.</b> Stage I ■ 148 .. II □ 146 .. III ■ 207 <b>TOTAL 501</b>	84	66	27	6	15	17	6	16	56	4	3		Stage I. 18 .. II. 15 .. III. 6
<b>1902.</b> Stage I ■ 266 .. II □ 161 .. III ■ 243 <b>TOTAL 670</b>	92	77	25	6	16	20	2	6	53	1	1	2	Stage I. 17 .. II. 15 .. III. 5
<b>1903.</b> Stage I ■ 279 .. II □ 187 .. III ■ 252 <b>TOTAL 718</b>	88	88	36	8	8	25	1	3	39	3	1		Stage I. 5 .. II. 8 .. III. 3
<b>1904.</b> Stage I ■ 284 .. II □ 209 .. III ■ 254 <b>TOTAL 747</b>	94	91	52	2	8	34	1		13	1	1	1	

### WORKING-CLASS SANATORIUM AT FRIEDRICHSHEIM (BADEN).

#### Permanent Results of Treatment.

[This diagram sets forth the results of treatment in a large German working-class Sanatorium. The patients are classified under three heads:—Early Cases, Grey; Fairly Advanced, White; Advanced Cases, Black. The actual number treated in each class each year is given in the left hand column. The condition of all these patients at the beginning of 1905 is given in the next three columns, under three heads:—Able to Work; Alive, but Not Able to Work; and Dead. The height of the columns show the percentage of patients in that class, and this is also expressed by the figure over each column. In this way one can see at a glance that at the beginning of 1905 the vast majority (85 per cent.) of first stage (grey) cases treated in 1900 were still able to work, and only a small minority (7 per cent.) were dead, and so on. Modified from a diagram illustrating Dr. Rumpf's Paper, in the *Verhandlungen der deutschen Zentral Komitees zur Bekämpfung der Tuberkulose*, 1907.]

# THE COMBAT AGAINST TUBERCULOSIS IN GERMANY

## WITH SPECIAL REFERENCE TO SANATORIA AND DISPENSARIES

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H. E. THE COUNTESS OF ABERDEEN in the Chair.

DURING the six years that have gone by since the great London Tuberculosis Congress of 1901, and the consequent foundation of the National Association for the Prevention of Consumption, a considerable amount of public attention has been directed here in Ireland to the prevalence of the malady in question. Owing to the persistent activity of her Excellency's Tuberculosis Exhibition Committee, knowledge on this subject has been, within the last three months, diffused with hitherto unexampled rapidity. The main facts about tuberculosis—its infectivity, mode of propagation, and the grave danger which it constitutes to our national health and our national prosperity—have been repeatedly and, I venture to think, effectively impressed upon the popular mind. We have now reached a most important point in the history of the anti-tuberculosis movement. A general agreement has been reached that something should be done. We have now to determine what form our action is to take. It is most important that the campaign be conducted on scientific, uniform, and well-thought-out lines. Otherwise it is doomed to failure, with the result of engendering a feeling of discouragement and disappointment that may leave us worse off even than we are at present. I have said that the cam-

campaign must be scientific, for practical science is nothing more than the adaptation of the proper and available means to bring about the desired end. The campaign must also be, so far as possible, conducted on uniform lines throughout the country. A grave danger arises from lack of co-ordination. Methods that may seem good in one county or district may not be acceptable to the next. Local authorities may be, and sometimes I fear are, as a matter of fact, without the theoretical knowledge necessary for conducting the movement on scientific lines. Hasty and ill-considered action, however good the intention, will not achieve the desired result. It may be urged by the enthusiastic that we have been considering long enough, and that the time for action has now come. Quite true, but it should be borne in mind that great bodies move slowly, and that the effort of a nation to root out a hidden foe that has entwined itself into its very vitals requires time for its development and evolution. The national effort must be a mighty one, and it should be deliberate. Impending legislation may make considerable changes in the powers of local authorities and the means at their disposal.

Since I have entered upon this struggle I have become gradually more and more impressed with the desirability of the creation, whether by statute or by general agreement, of some sort of central body, comprising the best scientific, official, and representative elements in the country, with the object of guiding, co-ordinating, and systematising local effort. The body might be called "The Central Tuberculosis Committee," or some such name. It should command the hearty and unreserved co-operation of the medical profession, and of all other interests involved. Such a body already exists in Germany, and has largely contributed to the development of the movement along the right lines, and I can see no reason why we should not have a similar favourable experience over here.

Although it is to a German, R. Koch, that we owe the discovery of the tubercle bacillus—one of the most

creditable and difficult that have been made in the nature of bacteriology—the great development of the institutional treatment of tuberculosis in Germany is not to be ascribed to the nationality of that scientist. His discovery was made just twenty-six years ago, and tuberculosis was thus placed in the category of infectious and preventable diseases. But for several years afterwards no very definite steps seem to have been taken to utilise the great discovery for purposes other than clinical diagnosis and scientific experiment. Koch laid down that the disease would have to be dealt with on lines somewhat similar to those already adopted with success against the other zymotic diseases—isolation of the infectious patients and disinfection of their surroundings. But even in Germany the popular mind takes some time to realise the practical bearing of scientific discovery, and, so far as I am aware, the consequences of that discovery were allowed to remain confined to the clinician and the scientist until the great system of workmen's insurance became developed, towards the year 1886 or 1887.

It would be interesting to give a detailed account of how this remarkable piece of State socialism is actually worked. But it would take too long. Moreover, I have already done so in a report to the Local Government Board. Suffice it now to say that both employer and employed are compelled by law to contribute a small but clearly-defined fraction of the wage which the one pays and the other receives to a common fund, which is used for assisting the insured, when, through any cause, such as accident, acute disease or chronic illness, they are unable to earn wages. The funds thus accumulated are very large. Thus, from 1885 to 1905, close upon a hundred millions of pounds sterling was spent in financial and other aid to insured members of the working class, during the various contingencies that prevented them from supporting themselves and their families in the usual way. The administration of the funds is vested in the hands of regional offices manned by skilled

officials, whose business it is to consider the requirements of each individual applying for aid and allocate to him the weekly or monthly "pension" to which he is entitled, or, failing that, to assist him in the best possible way. By virtue of this law, thirteen millions of German subjects are insured against what is called "invalidity"—that is, against prolonged or permanent loss of working power through illness.

The mainspring of collective action against tuberculosis in Germany is Clause 18 of the Workmen's Insurance Law, which reads as follows :—

"If an insured person is taken ill in such a way as to render it probable that he may lose his earning power, and thus become entitled to the invalidity pension prescribed by the law, the Insurance Office is empowered to apply in his case whatever course of treatment may seem to it most suitable for preventing such loss of earning power." In the year 1895 this clause was held to apply to tuberculosis, and the Regional Insurance Offices received formal authorisation to set up and maintain their own sanatoria. The way was thus thrown open for the enormous development of the sanatorium system that has since taken place. Convinced that the restoration of the consumptive worker to health was the object to be aimed at, rather than the long-continued support of himself and family during the tedious stages of a hopeless malady, the insurance societies threw themselves energetically into the path so marked out. And what has been the result? At the commencement of the present year there were in Germany no less than eighty-seven working-class sanatoria with eight thousand four hundred and twenty-two beds. Thus are thrown open each year all the advantages of sanatorium treatment, with its fresh air, good food and repose, to no fewer than thirty thousand members of the working-class men, women, and children. In this connection it is unnecessary to go into the question as to how many are cured. All those treated enjoy a course of hygienic training which must influence their mode of living after their return home, and their

example must favourably affect untold multitudes of others. In this way advantages formerly reserved for the wealthier classes have been extended to the struggling workers. But it may be objected that we have nothing in this country analogous to the German Workmen's Insurance. No doubt, that is so. At present we lack the machinery for compelling members of the working class to make the necessary provision for themselves. Their employers do so, in a sense, when they pay their poor-rate, and it is quite conceivable that the large sums rendered available under our Poor Law System might be made to afford means for treating consumption amongst the working class. This is at present actually being done in the South Dublin Union under the skilled superintendence of my friend Dr. Frank Dunne, who, I am glad to see, is coming on a future date to address you. It is also being done on a still larger scale by the Guardians of the Belfast Union. Proposals of a similar kind have been made by his Lordship the Most Rev. Dr. O'Dwyer, Bishop of Limerick, for the proper treatment of consumptives in the Union Hospital there, and it is to be hoped that these very sensible suggestions of his Lordship may recommend themselves to the elected representatives of the people.

Should the recommendations of the recent Vice-regal Poor Law Commission be passed into law, the door will be thrown open for a general extension of the sanatorium system in connection with poor law infirmaries throughout Ireland. They have gone even further along the same lines in Germany. They have a poor law there also, and inasmuch as the relief it affords entails the loss of civil rights, it is only availed of with reluctance and as a last resort by respectable members of the working class, as is the case here. The highest poor law authority in that country—that which discharges for local poor law institutions the same function as the Local Government Board here—has, four years ago, pronounced that it is not merely optional but the duty of the local authorities to provide sanatorial treatment for



such of the very poor as may be ascertained by medical examination to stand in need of it. Helpless orphan children and widowed or husbandless mothers who stand outside the benefits of the insurance law are thus afforded the advantages of sanatorial treatment. In Germany, however, the poor law does not possess institutions of its own, and simply pays for the maintenance of the poor consumptive in some working-class sanatorium or convalescent home. As we all know, the reverse is the case in Ireland. Instead of those relieved under the poor law being drafted into institutions, maintained for the benefit of those a degree or two higher up in the social scale, our tendency is to admit into the workhouse hospitals persons belonging to the respectable working class, and that for lack of suitable sanatorial and hospital accommodation elsewhere.

The results achieved by popular sanatoria are regarded by the overwhelming majority of German medical authorities as eminently satisfactory, and in my report to the Local Government Board I have already quoted some of the figures. It is not my purpose this evening to restate the case in favour of sanatoria. My views on that point are already well known. But as the utility of these institutions has been called in question, I may be permitted to adduce some additional figures from the report for the current year of the German Central Committee for the Prevention of Tuberculosis. They have reference to the statistics of the Sanatorium at Friedrichsheim (Baden) for consumptive working men who are insured. There are in this institution one hundred and seventy beds, and seven hundred and twenty-seven patients are discharged each year, the average duration of treatment being seventy-four days. For five years after discharge each patient is carefully followed up by the insurance society, and official reports as to his health and working power are made at regular intervals. Now, the condition of the patients discharged during 1901 was as follows at the beginning of 1906—that is, from four to five years after discharge:—Of every hundred patients admitted in the first stage, eighty-six; of those in the second stage,



sixty-one; and of those in the third, or severest, stage, twenty-five were still able to work. Five years is a long period in the history of even a slow disease like consumption. When a consumptive working man has been able to pursue his avocation, and bring some of his children through the period of school-age up to the threshold of earning power—and the five years' respite will in many cases enable him to do this—we may surely regard him as, at any rate, an economic cure. To do this for seven-eighths of the early cases and for one-fourth of the advanced ones is surely a remarkable achievement. I am, therefore, distinctly of opinion that the vast majority of cases taken up in the early stage and sanatorially treated may look forward with confidence to several years of economic activity. Nor does climate seem to matter. At Friedrichsheim they got as good results as in the Swiss mountain health resorts, nor did the season, winter or summer, make any difference in the favourable outcome of the treatment.

It has been objected in some quarters that the cost of sanatorial treatment outweighs its advantages. Here, again, the experience of Germany is of use to us. I will summarise the case as it is ably presented by Privy Councillor Bielefeldt, speaking on behalf of the insurance societies. From their point of view the main object is to save pension-money, so that the figures that follow have reference solely to this, all the pecuniary saving to the community at large, contingent on a workman's restoration to health, being left out of account. The invalidity pension is small, amounting only to £8 a year on the average, or £40 for five years. The inclusive cost of the treatment amounted, during 1905, on an average, to £18 3s. per patient. If we assume that the result of the treatment is to restore or preserve the patient's working power for five years, then we have a gain to the insurance society of £40, less £18 3s., or £21 17s. If his restoration only lasts four years, the gain is £32, less £18 3s., or £13 17s., and so on—restoration for three years' profit, £5 17s.; restoration

for two years' loss, £2 3s.; restoration for one year's loss, £10 3s.—whilst if the treatment is a complete failure, and there is no restoration of working power, then the whole £18 3s. is lost. On the assumption—which is more than warranted by statistics—that of every hundred cases in all stages treated in 1901, thirty-five preserved their working power till the end of 1905, six preserved their working power till the end of 1904, six preserved their working power till the end of 1903, nine preserved their working power till the end of 1902, fifteen preserved their working power till the end of 1901, whilst thirty never recovered their working power; then we have a gain in the first three classes as follows:—

£	s.	d.				£	s.	d.
21	17	0	×	34	=	742	18	0
13	17	0	×	6	=	83	2	0
5	17	0	×	6	=	35	2	0
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Making a total gain of.....£861 2 0

Now for the losses:—

£	s.	d.				£	s.	d.
2	3	0	×	9	=	19	7	0
10	3	0	×	15	=	152	5	0
18	3	0	×	30	=	544	10	0
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Total loss.....£716 2 0

Subtracting this from the gain, we have a balance on the right side of £145 for every one hundred treated, so that on the one hundred and fifty-nine thousand eight hundred and two patients treated during the ten years 1897-1906 there was a total saving of £231,505 on insurance pensions alone, and this is certainly an under-estimate, as the statistics are in reality much more favourable. It must be remembered, moreover, that the amount mentioned only represents that saved on the little "invalidity pension." If a man's work be valued at £50 a year, and the cost of nursing and caring him each year he is ill, at 10s. a week or £26 a year more, it will at once be seen that every year of working power lost means an immense sum. Then in Germany, where about eighty-seven

thousand persons of working age die yearly of tuberculosis, the loss is six and a half million pounds, and that sum is saved when the working power of that number has been preserved as the result of treatment. Take the figure for Ireland. Here we may reckon that about eight thousand persons die of consumption each year during the earning period—twenty to sixty-five. Suppose that number of persons had their working power prolonged for a year there would be a saving of £600,000, and this, I believe, could readily be effected by a proper system of sanatorial treatment.

I now come to an institution which may be regarded as the central point of the whole struggle—the consumption dispensary. Of these there are two sorts or types—one that which has taken root in France and Belgium under the influence of Professor Albert Calmette, of Lille, whilst the other is that established in Berlin by Ministerial-Director Althoff, and which has been developed under the influence of Privy Councillor Pütter and Professor Kayserling. I shall deal in this lecture with the German type of dispensary, the working of which I have had the opportunity of personally inspecting a few months ago. I desire to avail of this occasion in order to express my deep sense of indebtedness to Professor Kayserling and the Doctors Hesse for the kindness with which they showed me the working of the dispensary and placed their large fund of experience at my disposal.

The idea of the German tuberculosis dispensary is to combine in one centre all the various weapons which science and benevolence have placed in our hands as against infectious disease, and to adapt them to the specific peculiarities of tuberculosis. For the sake of clearness I will state the objects and methods of this institution in the following numbered paragraphs:—

1. Applicants are not medically treated. They are merely advised how to obtain the necessary treatment.
2. Applicants are carefully examined by a skilled doctor, and their exact condition noted down.

3. The day after their appearance at the dispensary each applicant is visited at his or her abode by a specially-trained nurse.

4. Should the original applicant be found to have tuberculosis, he or she is requested to bring all the other members of the family or household, or as many as can be induced to come, to the dispensary for examination on a subsequent day.

5. The physical condition and circumstances of each applicant having been carefully ascertained and entered in a separate note-book kept for that patient, and called his "journal," they are considered by the doctor and nurses attached to the dispensary, and the best advice given, as well as material assistance if urgently needed.

I shall now say a few words explaining each of these points a little more fully.

1. Applicants are, first of all, asked if they are already under the care of a doctor. If this is the case, the applicant is handed a form, and asked to take it to his doctor, and bring it back filled in by him. On the form are blanks for the name and abode of the patient, the diagnosis—probable or certain—and for any special observations. It is worded—"So-and-So, of such an address, is hereby referred to the Tuberculosis Dispensary, signed, So-and-So, M.D." The applicant, having thus obtained the consent of his medical adviser, is examined at the dispensary, the diagnosis, so far as concerns the presence and extent of tuberculous disease, is made or confirmed, and the patient is referred back to his own doctor for treatment. The patient's doctor may ask for suggestions as to treatment from the dispensary, and his request is then complied with. But he is at perfect liberty to carry them out or not as he sees fit. The root idea is to avoid interfering with the relation between doctor and patient—to do nothing for the latter without the concurrence of the former. In this way the entire sympathy of the profession is enlisted in the work of the dispensary. Should there be no doctor in attendance, and the case requires institutional treatment, steps are

taken by the dispensary to obtain it for the applicant, all the correspondence being conducted by the staff nurse attached to the dispensary. Should the patient have no doctor, and be too poor to pay for one, he is handed a card containing the details of his case, and referred to a hospital for treatment.

2. The doctor in charge of the dispensary examines each case in a private room, noting what he finds as he goes along. The stethoscope and pleximeter are mainly relied on; the temperature is taken, and the sputum examined. The work is got through very quickly, and no attempt at refinement of diagnostic methods is made. The patient's previous history and his domestic circumstances are meanwhile noted down by the staff nurse. In order to save time, abbreviations and signs are largely employed. The examination completed, and all details having been entered in the patient's journal, he or she is told to return in a week or a fortnight. *If the presence of tuberculosis has been established, the patient is asked to bring the other members of the family or household, more especially children, for examination.*

3. The staff nurse's function is to commence the writing up of the applicant's journal when he or she first comes to the dispensary. Next day, when she pays her visit to the applicant's abode, she takes the journal with her, and fills in the details regarding the condition of the dwelling, clean or dirty, lightsome, dark, dry or damp, number of rooms and of inmates, number of beds, and whether the patient sleeps alone. All this is laid before the doctor, and on the occasion of the patient's next visit to the dispensary the necessity of a change of abode, for a money grant to enable the family to pay a higher rent, or to procure additional beds, is discussed with the applicants or the responsible relatives. Another and most important function of the nurse is to teach the housewife how to keep the room clean, how to deal with his eating utensils and washing, more especially the pocket-handkerchiefs, as well as how to collect and disinfect the sputum. The more carefully the family carries

out these instructions the fewer the visits necessary. But in all cases a permanent watch is kept on all families of which there are tubercular members in residence. When advanced and infectious cases are found in ordinary working-class quarters they are desired to go into hospital, at any rate for a time. They go there gladly in the hope of being cured, or, at any rate, improved, but are seldom kept for more than a few weeks for much the same reasons that prevail with hospital authorities in this country. Still, the absence of the patient, temporary though it be, gives an opportunity to improve the mode of living of the family and get the room thoroughly disinfected.

4. The results of the rule that the other members of the family must also come to the dispensary have been most important. Let me insist upon the fact that mere inquiry from the original applicant as to their state of health is of no value whatever. Nothing short of skilled and minute personal examination by a competent doctor can reveal the earlier stages of the malady. By strict application of the rule it has been definitely ascertained in Berlin that when one member of a family that lives in a one-room tenement suffers from tuberculosis, other members are more or less affected. One will be in bed in the last hectic stage of pulmonary tuberculosis, another will be able to get about and do a little light work, a third will be found to have a closed pulmonary lesion, whilst one or more of the children will have enlarged glands. The rule is that children of such families are with few exceptions more or less affected, the usual lesions being tuberculosis of the glands in the neck, of the bronchial glands, or of the apex of the lung. They are attending school, and feel all right so long as they do not take cold and are not subjected to any unusual strain. These children are regular bacillus carriers, not in the sense in which the term is used with reference to typhoid or cholera—diseases that are propagated by such persons—but in the sense that they carry the germs about with them in closed foci, from which,



as the result of chill, hunger, or exhaustion from any cause, they may spread to the surroundings or to the whole body, and give rise to the disease in its acutest form.

5. The question will arise in the minds of many of my hearers, if the tuberculosis dispensary does not supply medical treatment, of what use is it to those who apply for relief? The answer is that it puts the applicants in the way of obtaining relief, and in certain cases actually affords it. First of all, when cases are still in the curable stage, it puts them in the way of being cured. The dispensary conducted on the lines I have sketched out has this enormous advantage over all other anti-tuberculosis institutions—that it discovers, or unearths, if one may use the term, hundreds of such cases at the very time when such discovery is fruitful of good results. The staff nurse's duty is to find accommodation for each of her cases in the proper institution—convalescent home, seaside home for children, sanatorium, or the like. Pending their reception in one or other of these institutions, she may arrange to have them taken at a "diurnal air-cure station." One of the nurse's most important qualities is that she knows all about these various establishments, their managing committees, and how to get patients admitted. She must know how to avail of the special institutions provided by insurance societies, railway companies, trade societies, the post office, military service, and other departments. She must discover what claim her patients may have on any of these bodies, and avail of it to obtain for them the institutional treatment of which they stand in need. Should they be too low down in the social scale to obtain relief in this way, the staff nurse invokes the aid of the poor law, and obtains for her *protégés* such outdoor relief as they are entitled to. All the correspondence in connection with these endeavours is carried on by the nurse, who presents her letters to the doctor on each dispensary day for him to approve and countersign.

Then, in the second place, when cases are advanced

and need hospital treatment, the doctor selects the appropriate hospital or out-patient department, and provides the patient with a form bearing the details of his case, and suggestions as to the treatment needed. The form bears the imprint of the dispensary, and is drawn out and signed by the doctor. Should the applicant be under the care of a private practitioner, his card is filled, and he is referred back to that practitioner for treatment.

In the third place when, owing to the prolonged illness of the breadwinner, the family visited is in the direst need, all available resources being exhausted and all articles that can possibly be done without having been sold or pawned, the staff nurse can obtain from the dispensary, after consultation with the doctor, a money grant sufficient for their immediate needs, such as food or additional beds, or to buy stock-in-trade for some small business, or procure such articles as a sewing-machine, to enable money to be earned. Should it be imperatively necessary to get them more room, or to dispense with existing lodgers, the nurse can obtain a weekly grant of the extra rent from the dispensary funds. Where the poor law funds are available she communicates with the proper official, and thus secures the required succour. Finally, when the housewife is herself seriously ill, and has to go to hospital or to a sanatorium, the staff nurse arranges for a respectable woman to come for so many hours a day to look after the household.

From all this it will appear that both the doctors and the nurses at each dispensary must be persons possessed of very special qualifications. The doctor must be a rapid and accurate diagnostician, as well as thoroughly acquainted with all the machinery that can be anyhow set in motion on behalf of applicants. The staff nurse, or "Sister," as she is always called in Germany, must not only possess the highest technical training, but also be a highly educated lady, able to conduct official correspondence, and tactful in dealing with the poor. She



must know when to give and when to withhold material aid—how to afford needed relief without pauperising her *protégés*. She must reside in the district served by the dispensary. Her whole time must be given to her work, and her recompense must be adequate to the importance of her functions. The German Tuberculosis Dispensary is intended not for the rural districts—at any rate not primarily—but for work in great cities.

I will now sketch out the development of the system in Berlin, where it was begun in the summer of 1904 by a committee composed of twenty-four members, mostly in high official positions, such as medical officers of health, statisticians, officials of the insurance, police, and military medical services, and leading members of the Municipal Public Health Committees of the city and suburbs. A number of these were already members of the German Central Committee for the Prevention of Tuberculosis, possessed its ear and could command its funds. The two leading officials of this Dispensary Committee are the President, Geheimrath Pütter, official head of the great Charité Hospital at Berlin, and the General Secretary, Dr. Kayserling. These two gentlemen have moulded and guided the movement and made it what it is—an astonishing success, as will be seen directly when I tell the work it has accomplished. Dr. Kayserling, being entrusted with the medical part of the work during the first few months, examined all the patients himself. The first of these dispensaries began its work on the 1st September, 1904, in a suite of three unoccupied apartments at the Charité Hospital. Its staff consisted of a single doctor and a single staff nurse. In October three more staff nurses were added, and in November three additional nurses and a second doctor. In the following April a third doctor, and in May a fourth were added. At the same time two new dispensaries were opened. At the present time there are five dispensaries, one for each quarter of the city, worked by seven or eight doctors and fourteen or fifteen nurses. Each large suburb of Berlin has its own dispensary, with

a separate staff. Each dispensary is open for two hours (generally four to six in the afternoon) for two days in the week, so that the same doctor can serve at more than one dispensary. This is actually the case, for the profession in Berlin has produced men possessing great skill, great working power, and great enthusiasm, who are willing to give up their afternoons nearly every day in the week to this arduous labour for what would seem to us in this country very inadequate remuneration. The statistics before me only cover the first nineteen months' work, from September, 1904, to April, 1906.

The number of applicants dealt with rose very rapidly, as may be seen from the following table:— In the first three months, 646; in the second three months, 1,569; in the third three months, 2,604; in the fourth three months, 3,641; in the first seven months of the second year, 7,186; total in nineteen months, 15,646. Of these, 3,033 were men, 5,689 women, and 6,924 children. All of these were examined for tuberculosis on at least two occasions, and those proved or suspected to be tuberculous were re-examined at regular intervals of six to twelve weeks. The number of separate examinations during the nineteen months was well over 50,000. The number of separate families dealt with was 7,500. Sanatorial treatment was obtained for 1,077, whilst 1,014 were sent to diurnal air-cure stations, the funds necessary for their maintenance being obtained through the insurance system or the poor law, or from benevolent associations through the medium of correspondence conducted on behalf of the dispensary by the staff nurses. About £250 was paid out in cash to relieve cases of extreme need, and 362 beds were obtained, partly from the Central Committee and partly from the Poor Law Boards. The number of visits paid was 18,540, and 420 persons in the infectious stage were moved into hospital. The number of children sent to convalescent homes in the woods or by the sea was 623, with excellent results in all the early cases. It is most important to despatch tubercular children to such insti-

tutions in good time, as once the case passes into the "open" stage the results in children are not so favourable. Roughly speaking, 3,000 persons (one out of every five examined) were sent to appropriate institutions, and the amount of money set in motion against tuberculosis amounted in the nineteen months to somewhere about £37,500. The success of the dispensary movement on the lines just sketched out has been such that there are now 117 of these establishments in the great cities and towns of the German Empire. They are supported in some cases by grants made by the town itself out of money raised by local taxation, and in other cases by the insurance societies. Most of them, however, derive their income partly from these two sources, partly from the German Central Committee for the Prevention of Tuberculosis, and partly from funds locally contributed by benevolent individuals or charitable societies.

It is most important to bear in mind the difference between a dispensary on these lines and an ordinary dispensary, as we understand the term in this country. At our Irish dispensaries patients receive medical treatment. They may, therefore, be said to be conducted as a substitute for, if not actually in competition with, the private medical practitioner. The dispensaries attached to our Irish hospitals—out-patient departments, as they should more properly be called—are only concerned with the patients at the time of their actual attendance, and do not follow them up to their homes. Under our Poor Law System the dispensary doctor has to visit his patients at their homes, but the object of such visits is purely, or, at any rate, mainly, curative. On the other hand, the German Tuberculosis Dispensary seeks to track the enemy to his lair—to follow up the disease, discover its hidden lurking-places, and cleanse them. It does not seek to cure, but to co-ordinate the already existing curative measures, and focus them on the plague-spots so dragged to the light of day. It seeks out the cases, segregates them into their categories, and puts them on

the road to cure, or, should this be impossible, robs them of their danger to the family and community.

From this it will be seen that the word "dispensary" is, in this country, not applicable to the kind of institution I have endeavoured to depict. The appellation tends to convey a false idea, and to excite hopes not destined to be realised. For this reason, should we ever decide to take up work over here on these lines, we must, if possible, do so under another name. In Germany, the institution is termed "Auskunfts-und Fürsorgestelle für Tuberkulöse," an appellation which cannot be conveniently Englished, but which means "a place where tuberculous persons receive information and care." I would, therefore, venture to suggest that "Consultation Office for persons threatened with consumption" would be a suitable name, stress being laid upon the words "Consultation Office," and the remainder of the title allowed, so far as possible, to lapse, as soon as the character of the institution became known. One such Office would, I consider, probably suffice for each hundred thousand of the population. If more than one such Office were required in a town, they should all be under the management of the same committee, and, if at all possible, of the same medical men, each staff sister being, of course, attached exclusively to her own quarter of the town.

I am convinced that the establishment of such Consultation Offices would be of most practical value in the campaign against consumption, and might avoid the necessity of measures about the advisability of which there still seems to be a good deal of difference of opinion. Their relations with the Public Health Office might be, and, in fact, ought to be, close and confidential. I am convinced that tuberculosis is in Ireland mainly a disease of habitation, and that until we reform our working class dwellings we shall continue to suffer heavily from its ravages. Such Consultation Offices would enable a fund of valuable information to be collected about the condition of the dwellings of the poor and its relation to the spread of the disease. They could

not fail to be of great assistance to our Municipalities in drawing attention to the existence of evils which are at present unsuspected, and therefore unremedied, and by awakening the public conscience they would pave the way for those sanitary reforms for which there is such a crying need in our Irish cities and towns. Let me not be misunderstood. I am not urging on the citizens to set up such an Office at present. Before doing so it would be necessary to have the means of dealing with the crowds of tuberculous persons who would undoubtedly apply for advice and assistance. For curable adults, a sanatorium; for children, one or more convalescent homes by the sea or in the woodlands; for advanced cases, hospital accommodation either in the general hospitals or in a special department of the Union or district hospitals. Unless this institutional machinery be first provided, the Consultation Office, on the lines I have endeavoured to sketch out, would be a disappointment and a failure. I would ask you, therefore, to be deliberate and judicious in your action. Let the best qualified citizens consult together as to how the necessary institutions are to be provided. I will conclude by once more saying that in order to avoid eccentricities of local enthusiasm I should like to see a few leading men, well instructed as to local feeling and local possibilities, appointed by each of the Irish County Boroughs to meet together and consult with officials and experts, so as to devise a scientific, a uniform, and a reasonable plan of campaign against the common enemy—tuberculosis.

VERY REV. CANON DOYLE, P.P., Tagoat, Co. Wexford, said: You have heard this evening a most interesting lecture indeed. We do not like things made in Germany as a rule, such as candles, soap, and other things that are imported from there; but I think that the most ardent Irishman will be ready to receive the German ideas of sanitation, and find no fault with them. It was suggested to me at the beginning of the meeting by Dr. Flinn that I should refer to the effort that was

being made in Wexford with regard to the consumption question. A year ago, almost to the day, a public meeting was held in the town of Wexford. It was held under the initiative of the Wexford District Council. Representatives of other District Councils of the county were present, as were also a large number of doctors. A great many speeches were made, as is usual on these occasions, and resolutions were passed. One of them, I think, will have relation to what has been said here this evening, and that was that the three neighbouring counties to Wexford should be called upon to form a joint sanatorium. The thing has been in process of consideration ever since, but you know that it is said of us in Wexford that we are slow, and it is also said of us that we are sure ! But I can vouch only for the slowness on the present occasion. There has also been formed in the County of Wexford, at the suggestion of her Excellency, a local branch of the Women's National Health Association. The branch was only formed a few months ago, but I hope that great results will come from it in the future, when it is properly organised. It has been organised under the local presidency of Lady Maurice FitzGerald, who takes a great interest in all things connected with the welfare of the people of my native county. It may be some time before sanatoriums can be erected in Ireland, but I think, in the meantime, that in her Excellency's Association the women of the country can do very much to prevent this dread evil of consumption. There is no question, I suppose, of the dreadful loss of life amongst us caused by consumption. At one of our meetings in Wexford it was suggested by one of the speakers that the number of deaths from consumption in Ireland was between 11,000 and 12,000 a year, and it was pointed out that that meant a number equal to the population of a town like Wexford. It meant that a town like Wexford, which has a population of between 11,000 and 12,000, was swept away every year. I think that the Women's Association can do much to prevent the spread of consumption. The great cause, I submit, of con-



sumption is want of fresh air in the houses and want of cleanliness. That condition of things can be very largely dealt with by the Women's Association by house-to-house visits, by women's chats, and by lectures in the school-rooms, and particularly by the giving of lectures to the school children by some competent authorities, and by occasional lectures by such eminent men as Dr. McWeeney. In the village where I live—which is a very small hamlet—we have a hall something like this, and I trust that Dr. McWeeney will give us a lecture there under the auspices of the local branch of the Women's National Health Association. I have great pleasure in moving a warm vote of thanks to Dr. McWeeney for his kindness in coming to lecture this evening, and for the able manner in which he has elucidated many striking points in connection with this important subject.

COLONEL STEELE said: Your Excellency, ladies and gentlemen, I beg to second most heartily the vote of thanks proposed by Canon Doyle.

DR. FRANK DUNNE said: Your Excellency, ladies and gentlemen, Dr. McWeeney has given us in his lecture so many points of interest that it is very hard to know where to begin. But perhaps the first thing that struck me in what he said was that in Germany they had men of education on the local boards. Well, I think that it will not be the fault of her Excellency and the Tuberculosis Committee if the members of the local boards are not thoroughly well educated in Ireland on the question of tuberculosis before this Exhibition has ceased its rounds through the country. Of course the question of the education of members of public boards rests with ourselves. Every one of us has a vote. The elections are coming round shortly, and we can see that the men whom we send to represent us on these public boards will be people who will take an interest in the question of consumption, which is the biggest question before the

country, and the question of the most vital importance to all of us. I think really that the most important point in the whole of Dr. McWeeney's lecture was the information which he gave us about the working of the tuberculosis dispensaries in Germany. That is quite a new idea to us, and it is a thing that is very feasible. These dispensaries could be started by the local Boards of Guardians. The Boards of Guardians, with the help of societies like this, could easily start tuberculosis dispensaries. In a town like this you would only want two such dispensaries, and in the small towns one would be sufficient. The great point about a tuberculosis dispensary is that by means of it medical men would come in contact with the people suffering from the disease, would explain to them what they should do to try and cure it, and at the same time what they should do to try and prevent their families and friends, and the people living with them, from catching the disease; and, in addition to that, and perhaps what is more important, the doctors and the people who would be in charge of those places would come upon the early cases. Early cases of consumption can be cured. There is not the slightest question of that. Many people have the idea that consumption is an absolutely incurable disease. The sooner we get that idea out of the minds of the people of the country the sooner something will be really done. I meet some 500 to 1,000 cases of consumption in the year, but I would not say that more than 10 or 12 per cent. have a prospect of being cured owing to their not being taken in time. If you had tuberculosis dispensaries all over the country—as Dr. McWeeney told us—the relatives of those who came to the dispensary would be examined by experts who would find out lurking signs of the disease, and these persons could be at once put under treatment, and in a short time they would be perfectly well, and could be sent back to their places in the world again. That is what they do in Germany. Germany is far ahead of many other countries on questions of sanitation and public health, and we have to take



a good many of our ideas from Germany. This Exhibition is the first of its kind in the United Kingdom. A good deal of good work is being done in this country, and I hope that we shall be able to utilise and consolidate all the information that we can get, so that it will come to something tangible, and that something really good will be done for consumptive patients throughout the country. I beg cordially to support the vote of thanks that has been proposed to Dr. McWeeney for one of the most, if not *the* most, interesting lectures on the subject that I have listened to.

The vote was passed with acclamation.

PROFESSOR MCWEENEY, in acknowledging the vote of thanks, said : No one is more conscious than I am of the feeling—the very proper feeling—that exists about things made in Germany. There is one thing that cannot be said to be made in Germany, and that is our practical knowledge in sanitary matters, which originated in this country. Great Britain and Ireland have been in the forefront of all questions of practical sanitation. We ourselves for centuries were a long way ahead of the Germans in this matter, and we are a long way ahead of them in a great many respects at present. Let me give one instance—the biological treatment of sewage, which is a method that originated in the United Kingdom, which has been developed in the United Kingdom, and in which the Germans are only following us at a very long interval. I do not for a moment suggest that we have nothing to learn from the Germans, but they, too, have an immense amount to learn from us. I hope sincerely that in this matter of tuberculosis we shall take up what is best in the German system, leave aside what is bad in it, and adopt as much as may be suitable to our own local requirements.







THE ABBEY SANATORIUM, BELFAST.  
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# THE SANATORIAL TREATMENT OF CONSUMPTION\*

By ALFRED R. PARSONS, M.D.; Physician to the  
Royal National Hospital for Consumption, Ireland.

H. E. THE COUNTESS OF ABERDEEN in the Chair.

OVER a quarter of a century has elapsed since, in a communication made before the Physiological Society of Berlin on 28th March, 1882, Professor Robert Koch claimed that he had found the cause of tuberculosis to be a bacillus with well-defined properties. Among the audience on that notable occasion was Professor Cohnheim, who, by certain tests, had conclusively proved that consumption was infectious, though he had failed to determine the exact nature of the virus. This eminent pathologist was so profoundly impressed with the value and importance of Koch's communication that, at its conclusion, speaking with much emotion, he said—"I have rarely in my life experienced a more intense joy than that produced by the reception of such good news." During the past twenty-five years Koch's experiments and statements have been investigated by numerous scientists, but not a single important conclusion of his original paper has been falsified. On the contrary, it is universally admitted that the seed which produces consumption is the tubercle bacillus.

Human beings—men, women, and children—and certain of the lower animals are the soil in which this baneful seed grows.

\* In part from a Lecture on "Home and Foreign Sanatoriums."

The sowers are men and cows suffering from consumption.

For many a day after infection the seed lies apparently dormant, and gives no manifest indication of its presence. From the first appearance of the blade—that is, the slight signs and symptoms of the early stage of consumption—till the harvest is fully ripe and ready for the sickle, about five years elapse. In Ireland other harvests are variable, large in some years, in others small; but this harvest changes little from year to year, and is always large.

A reference to the Registrar-General's paper will show that this harvest means an annual loss of 12,500 human lives. A further examination of his returns will prove that tuberculosis causes one-seventh of the total mortality and kills more people than all the zymotic diseases. Under this term are included small-pox, scarlatina, measles, diphtheria, epidemic diarrhœa, typhus, typhoid, cholera, dysentery, whooping-cough, influenza, puerperal fever, simple continued fever, and ill-defined fever. All told, they cause about 8,500 deaths yearly—only two-thirds of the number produced by tuberculosis alone. In the Dublin Registration District some 1,200 people die each year from tuberculosis, while in Belfast the annual mortality from the same cause exceeds 1,000. Towns are more subject to its ravages than the country, and its death-rate seems to be directly proportionate to the density of the population. In Leinster, with its comparative wealth and comfort, the death-rate is higher than in poverty-stricken Connaught.

Not only is tuberculosis the cause of this appalling mortality, but it generally claims its victims when they have reached an age at which their lives should be of the greatest value to the community. Comparatively seldom does it attack infants or young children, and still more rarely those in declining years. Its chief incidence is amongst those between fifteen and forty-five years of age, for half the deaths within these limits are

produced by it alone. These hapless ones have survived the vicissitudes of infancy and childhood, but are stricken down by this fell destroyer, often before they have reached more than half the allotted span of human life.

Such a heavy mortality occurring within these age limits constitutes a serious loss to the State. It has been estimated by statisticians that an adult man is worth £200. If we accept this figure Ireland loses yearly from tuberculosis alone about £1,000,000 by the death of her adult males, while if a woman is a State asset of equal value to a man the amount must be doubled. But this is only a portion of the loss. Tuberculosis is a chronic disease. During the earlier part of its course it may not materially interfere with the working capacity of its victims, but for months, or even a year, before death they are so enfeebled that they have ceased to be producers, and have become only consumers. As strength wanes an increasing amount of attention is required, and it often becomes necessary, among the poor, for a member of the family to devote a considerable part of her time to nursing duties, thereby interfering with her own employment, and necessitating a further diminution in the household's weekly income.

Face to face, then, with this lamentable morbidity and mortality from tuberculosis, and the consecutive sorrow and financial loss, is it not full time for the Government, the public health authorities, and the Irish people to join hands in devising means and undertaking measures whereby its ravages may be checked? Such measures must deal with the seed, the sowers, and the soil.

**THE SEED.**—Tubercle bacilli may be found in the discharge coming from glands or bones which are affected with tubercular disease. They have been frequently identified in the milk of cows with tubercular udders, and occasionally in the flesh of tubercular animals. Their most important source, however, is the expectoration of consumptives, in which they are present



in enormous numbers. It has been calculated that in a piece of sputum no larger than a hazel nut there may be 100,000,000 tubercle bacilli. Even in the act of coughing or speaking some particles of mucus, driven out of the lungs, may contain numbers of tubercle bacilli. Dampness, darkness, and the presence of decomposing organic material enable the bacilli to retain their infective properties for months. Direct sunlight has, on the contrary, a powerfully destructive action on these organisms, and they can also be destroyed by strong solutions of disinfectants, such as carbolic acid, corrosive sublimate, and creolin. In narrow streets and lanes, owing to the absence of sunlight, the expectoration of a consumptive may easily dry into a powder without losing its virulence, and if inhaled by a person with low resistance will produce laryngeal or pulmonary tuberculosis. Rooms inhabited by cases of phthisis soon become infected. Even where there is no gross carelessness with the expectoration the spray produced by coughing often contains bacilli which adhere to the clothes and the walls. A landlord should, therefore, be compelled by law to have a room or house which had been occupied by a consumptive thoroughly disinfected by the sanitary authority before a new tenant could enter into possession. The destruction of tubercle bacilli in the expectoration by chemical methods is simple, but it is not possible by the internal administration of antiseptics to destroy them in the human body. The organs of the body are made up of minute living cells which are more sensitive than the tubercle bacilli to the action of poisons, and any attempt to administer such drugs in a condition sufficiently concentrated to destroy the tubercle bacilli would produce disastrous results in the patient.

THE SOWERS.—Consumptives are the chief sowers. The sowing may be done, to some little extent, by speaking or coughing, but is mainly accomplished by spitting. One advanced case of consumption may expectorate half a pint of phlegm in twelve hours, and



is thus capable of doing an enormous amount of mischief. Tuberculosis could soon be stamped out in Ireland if it were possible to prevent the sowing which at present goes on every day and in all seasons. The danger of this habit is more appreciated than formerly. Notices prohibiting it can be seen in railway carriages, in tram cars, and in places of public resort. But public opinion in Ireland is not yet educated up to the level of New York, where spitting on a footpath is punishable, for the first offence, by fine, and if repeated by imprisonment.

Not one of the least important arguments for the establishment of sanatoriums is that in them patients are taught how to deal with their expectoration. Each person is compelled to carry a pocket flask and to collect his expectoration in it. At the close of each day the contents of the flask are mixed with sawdust and burned. The flask is then placed in a strong disinfectant overnight, and after washing the following morning is again ready for use. During the night an ordinary bedside expectoration cup containing a little antiseptic solution is used. Patients found expectorating about the grounds of the sanatorium are dismissed.

THE SOIL.—It is for all practical purposes true that the children of tubercular parents are not born infected—that is, that consumption is not hereditary. Yet there is considerable justification for the popular view that consumption runs in families. The explanation of this observation lies in part in the increased risk of infection to which the children of a consumptive are exposed, and in part in the deficient resistance of the tissues of the offspring of tubercular parents.

In ordinary life most people are exposed to the risk of inhaling dried tubercle bacilli. Only a portion develop consumption—the others remain well. The explanation of the difference is not in the seed or the sowing, but must be sought for in the soil. The power of resistance must vary among different people, and even in the same

person at different times. Resistance is lowered by occupations involving close confinement and the breathing of a vitiated atmosphere. It is also diminished by food deficient in quality or quantity, and by bad hygienic surroundings. Resistance, on the contrary, is increased by an open-air life, by the constant inhalation of fresh air free from dust and organic impurity, by abundant sunlight, by a liberal dietary, and by freedom from worry and anxiety.

THE PRINCIPLES UNDERLYING THE CONSTRUCTION AND MANAGEMENT OF SANATORIUMS are to use all factors which can increase the patient's resistance and to remove everything having a contrary effect.

SELECTION OF SITE.—“The sanatorium should be erected on a sloping and elevated site with a sunny exposure, and well sheltered from cold winds. It should be surrounded by extensive grounds, well wooded, and affording ample space for exercises of various kinds. The soil should be dry and permeable, and the water supply abundant.”

Purity of air and freedom from dust being of paramount importance, the sanatorium should not be situated in the immediate neighbourhood of a town or village, or in close proximity to a main road.

Owing to the monotony of life in a sanatorium there is often a great temptation to the convalescent patients to break bounds. To those accustomed to the use of stimulants this temptation becomes overpowering if they can be obtained without much fear of detection. A publichouse should, therefore, not be available within two miles of the boundary of a sanatorium.

Phthisical patients badly bear exposure to strong winds or great heat. The former increase their difficulty of breathing and chill them, and the latter depresses their appetite and exhausts them. A neighbouring pine forest, affording shelter from wind and sun, is a great boon to a sanatorium. Through it walks of various

lengths and gradients can be made, so that in all weathers it will be possible for patients to have their regular exercise.

**THE BUILDING.**—Sanatoriums, if not constructed on the villa system, generally consist of a central administrative block, and right and left wings for the male and female patients respectively. The sanatorium should face southwards, and all the patients' bedrooms should have a southerly aspect. It should not be more than two storeys high, because to many phthisical patients stairs are a great trial, and the higher the building the more difficult becomes escape in case of fire. The wings should be only one bedroom and a corridor deep. The latter should be amply provided with windows, and as the south wall of the bedroom is almost entirely occupied by a window the air in the room should rival the external atmosphere in purity.

The sanitary annexes jut northward from the extreme ends, and are separated from the main building by short corridors with free cross ventilation.

The dining-room may be built behind the administrative block, and be thus easily accessible to male and female patients. It should be conveniently near the kitchen, and yet so separated that there is no smell of cooking.

**BEDROOMS AND WARDS.**—In a sanatorium for paying patients separate bedrooms are essential; but in those for the poor there is an economy of space and money in using wards. Many of the poorer classes have not been accustomed to separate bedrooms. They dislike them as being too lonely, and prefer to sleep in a room occupied by others. These wards, however, should not, at the outside, contain more than six beds. Otherwise coughing may be so frequent as to interfere materially with sleep. Some single rooms are absolutely necessary, so that patients with troublesome cough, severe hæmoptysis, pneumothorax, or other complication, may be isolated and kept perfectly quiet.

The wards should be about ten feet high, and the cubic capacity per patient 1,500 feet.

**GENERAL STRUCTURE AND MATERIAL.**—Some of the best results obtained abroad in the sanatorial treatment of consumptives are those of Dr. Walther, of Nordrach. His sanatorium was opened in 1888, and originally consisted of a single house, accommodating ten patients. Plain wooden buildings were subsequently erected as required, and his results have demonstrated that elaborate costly buildings are not necessary for the successful treatment of tuberculosis. But care must be taken not to run to the opposite extreme in imagining that rough, hastily-constructed shelters are sufficient, for such structures will not be rain-proof, they will be impossible to clean, and will act as harbourers of dust and dried tubercle bacilli. A sanatorium should be substantially constructed of well-seasoned wood, on concrete pillars. The surface of the wood should be quite smooth, and all joinings should be so accurate that no crevices are left. The skirting boards should be properly curved, so that no dust can accumulate at what would otherwise be a right angle formed by the junction of the wall and floor. The exterior should be painted, and the interior either painted or varnished.

**FURNITURE.**—The furniture must be plain, light, easily moved, and easily cleaned. The bed should have large rubber casters, so that its position can be readily changed. Curtains, bed valances, and carpets are to be avoided.

**LIGHTING.**—From a hygienic point of view electricity is the most suitable illuminant. There is no smoke or dust, and the air is not contaminated. If the site be sufficiently elevated a neighbouring stream may afford enough water power to drive a motor. Any risk of failure of water power, such as might occur in a dry summer, should be met by providing an oil engine.

**HEATING.**—Open fire-places, owing to the unavoidable

dust, are objectionable. They are certainly not suitable in a sanatorium where it is desirable to have the air in the room as pure as the external atmosphere. In many sanatoriums the temperature of the rooms is kept at the temperature of the outside air. In others the temperature in winter is allowed to be slightly raised. Any rooms which require heating are best warmed by electric radiators.

**CAPITAL COST OF A SANATORIUM.**—The cost per bed varies within wide limits, depending on the class of patients for whom the sanatorium is intended. Those constructed for paying patients and on elaborate lines, as Hohenhonnef, may cost £660 and upwards per bed. Institutions for the poorer classes cost in Germany, according to Dr. Rufenacht Walters, from £120 to £300 per bed. He quotes Professor Leyden as giving £150 as a fair average for a sanatorium containing not less than 100 beds. A sanatorium on the lines suggested above could probably be constructed at a cost not exceeding £100 per bed for 60 beds. The actual cost of the building of the east wing at Newcastle, containing 32 beds, was £1,835. A west wing costing a similar sum would leave £2,230. Of this sum £1,800 would probably be sufficient for the central administrative block, affording accommodation for the medical, nursing, and domestic staff, a dining-room for the patients, and also kitchen, laundry, and out-houses. Furniture will cost on an average £3 to £4 per bed, and electric wiring from £1 to £2 per bed.

**THE PERSONNEL.**—In a sanatorium for 60 patients the minimum requirements will be :—

- (a) Resident medical officer.
- (b) Matron, who will act as housekeeper (£65).
- (c) One sister (£30).
- (d) Three nurses (£20 each).
- (e) Two probationers (£10 each).
- (f) Four wardmaids (£8 to £10).

(g) Two house and parlour maids, to attend on the medical and nursing staff (£12 and £10).

(h) One cook (£20); one kitchenmaid (£8).

(i) One laundress (£15); one assistant (£8).

(j) Male servants—One engineer to look after heating and lighting (£1 per week). One gardener who, with the assistance of some of the convalescent patients, should be able to keep the sanatorium supplied with vegetables. One handyman for messages, window-cleaning, &c.

DIET.—As food is an important factor in increasing the patients' resistance it is essential that the dietary be liberal, well-cooked, and comfortably served. Without slavishly following the compulsory methods recommended by Dr. Otto Walther and adopted by many of his pupils, the patient should be encouraged to eat freely. The open-air life, especially in cold weather, greatly stimulates the appetite; much more food is taken than before admission, and a gain in weight of 3 lb. to 5 lb. during the first week at Newcastle is not uncommon.

In arranging a dietary due regard must be had to national characteristics. Cheese, for example, which contains 33 per cent. of proteid in comparison with 18 per cent. in cooked meat, may form a large part of the proteid of an Englishman's dietary, but the average Irishman is not a cheese eater. To an Englishman pulses, also rich in nitrogen, are acceptable; but an Irishman much prefers cabbage and potatoes, which are very poor in nitrogen. The Irishman must make up for this deficiency in the nitrogen content of his favourite vegetables by taking a larger amount of milk, eggs, or meat than an Englishman eating cheese and pulses requires.

Dr. Burra, Resident Medical Officer at Newcastle Hospital, has calculated the average quantity of food per day consumed by each patient. His figures (omitting decimals) are—Milk,  $4\frac{1}{2}$  pints; butter, 1 ounce; eggs, 3; bread, 7 ounces; potatoes,  $6\frac{1}{2}$  ounces; sugar,



2 ounces; oatmeal,  $1\frac{3}{4}$  ounces; rice,  $1\frac{1}{4}$  ounces; meat (cooked), 8 ounces; bacon or ham, 3 ounces. He has worked out the proteid content of this diet to be 182 grammes, and its total caloric value to be 4,244.

The cost of food per head per diem at Newcastle for patients and nursing and domestic staff is 1s.  $6\frac{1}{4}$ d. As the patients doubtless eat more than the nursing or domestic staff per head, it is probable that the cost of the above dietary is from 1s. 9d. to 2s. per diem for each patient.

DAILY ROUTINE.—In Nordrach the patient is called at seven a.m., and the windows are closed so that he may not be chilled while dressing. Having taken his temperature he rises and has a shower bath at whatever temperature he finds agreeable. After dressing he is visited by one of the doctors, who examines his temperature chart, and, influenced largely by it, directs him as to the length and duration of his morning walk. Breakfast is from 8 to 8  $\frac{45}{60}$  a.m., and at 9 a.m. the patient begins his prescribed exercise. On its completion he rests in a chair, or hammock slung between trees, till noon, when he must retire to his room and recline on a sofa chair. He again takes his temperature, and is again visited by the doctor, who regulates the afternoon exercise. At 1 p.m. dinner is served. The afternoon is spent in taking the prescribed walk and resting in the open air. At 6 p.m. he returns to his room, charts his temperature, is visited for the third time by the doctor, who is closely watching the influence of exercise on the temperature. He remains at rest till 7 p.m. Supper is then served, and, at its conclusion, the patient stays in the grounds till 9 or 9  $\frac{30}{60}$  p.m., when he retires for the night. Febrile cases are confined to bed, and their meals are served in their bedrooms. Each bedroom is supplied with an electrical appliance for keeping the plate warm while the patient is taking his food.

In Nordrach there are no verandahs or air galleries. Dr. Walther is of opinion that the rest hours should be



passed by the patient alone in his bedroom. He does not approve of air galleries or verandahs occupied by several people, as, in his opinion, sooner or later discussions on social, religious, or political questions will arise, preventing the rest for mind and body which he regards as so important, and occasionally elevating the temperature.

These objections, forcible as they doubtless are in sanatoriums for the wealthier classes, do not carry so much weight in sanatoriums for the poor, where all belong to the same social class, and the majority to the same religion. In such sanatoriums air galleries are often useful, and enable the wards and bedrooms to be kept clean with a smaller staff.

**COST OF MAINTENANCE.**—The Royal National Hospital for Consumption, Newcastle, County Wicklow, contains 100 beds, which are in constant occupation. Connected with it is a Dublin office, where the Board of Management meets, patients are examined prior to admission, and the general secretarial work is done. The secretary and the assistant secretary are paid. The hospital is largely supported by voluntary contributions. This entails an expenditure on advertising, commission, printing, stationery, postage, &c. The total expenditure on maintenance for the year 1907 was £5,934 1s. 1d.—an average of £60 per bed. In a hospital for 60 beds, under the control of a joint committee, representing various contributing areas, and supported on the rates, some of the above items of expenditure would be materially reduced or disappear entirely. Inasmuch, however, as a small hospital is proportionately more expensive than a large one, it is not probable—provided that the dietary was equally liberal—that the annual cost of maintenance for a sanatorium of 60 beds would be less than £3,600.

**OBJECTS AND DURATION OF SANATORIAL TREATMENT.**—Two objects are in view—(a) the cure of the disease, or



ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND (100 BEDS), NEWCASTLE, CO. WICKLOW.

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at least a definite improvement in the health of the patient; (b) the education of the patient. Sanatoriums are primarily intended for incipient or early cases of consumption which offer a possibility of cure, or a reasonable hope of permanent improvement. Even, however, in cases in which neither of these results is probable, a course of sanatorial treatment will often produce a marked temporary improvement in the patient's health, and add some working years to his life. To cure a case of consumption requires a period of time not measured by days or weeks, but by months and years. The wealthy classes, to whom time and money are of little importance, may remain at a sanatorium till the cure is complete. For the poor man this is impossible. Sanatoriums supported by voluntary subscriptions or maintained by the rates are compelled to limit the stay of the patients, for numerous cases are clamouring for admission. Though the patient cannot be detained till he is cured, during his stay at the sanatorium his temperature has become normal, the cough has abated, the emaciation has been arrested, he has gained in weight, and he has learned by precept, example, and personal experience a method of living which, if he is only in a position to consistently carry out, may convert a losing into a winning battle, and eventuate in a brilliant victory. The usual duration of stay at a sanatorium for the poorer classes is from ten weeks to three months. In very promising cases the period may be extended to twenty or thirty weeks.

RESULTS.—These may be tabulated under three heads—(a) Curative, (b) Ameliorative, (c) Educational.

(a) *Curative*.—In a disease of the extreme chronicity of phthisis too much care cannot be taken in reporting cures. A too hasty pronouncement of cure excites hopes which are soon falsified by time and gives the public an erroneous impression of the value of sanatorial treatment. Time is the great test. In these countries reliable statistics are hardly yet available, because the majority of

the sanatoriums have been opened only within the last few years, and even in the case of those working for ten years—*e.g.*, Newcastle—there is a lamentable lack of accurate information concerning the subsequent history of the earlier cases. Under these circumstances we look to Germany, where sanatoriums for the well-to-do have been established for many years, and where the system of workmen's insurance renders it comparatively easy to follow up the subsequent history of men treated at the public sanatoriums. An accurate impression of the value of sanatorial treatment for the wealthy may be best conveyed by recording an interview with Professor Dettweiler which took place some years ago. Dr. Dettweiler was for many years the head of the Falkenstein Sanatorium, the reputation of which is world-wide. In 1900 he was an old man, but possessed of considerable vigour and energy. Forty or fifty years previous to that date he had had a very bad hæmorrhage from his lung, and since then had repeated attacks, which he counted up to sixty, and then ceased recording them. When Koch published his method for detecting tubercle bacilli Dettweiler sent to Berlin for the necessary stains, and found the organisms in his expectoration in abundance. For some recent years they could not be detected, though he coughed three or four times daily, and expectorated a little greenish yellow matter. Questioned as to results, he stated that 10 to 15 per cent. of the cases treated at Falkenstein were completely healed, and about the same proportion were practically cured. By being practically cured he meant that the patient was able to follow his occupation, though he might still have a little cough or present slight signs at the apex of either lung. "I am myself," he said, "an example of this second class, and I have worked like a horse." Professor Dettweiler died in 1904, but he left behind him the memory of a noble, devoted, and most successful life which should prove a stimulus and an inspiration to every young man suffering from consumption.

Ruppertshain Sanatorium is largely availed of by workmen employed in Frankfort, and is in part supported by their benefit societies. It is managed on similar lines to Falkenstein, and Dr. Nahm, the resident medical superintendent, is of the opinion that the results are practically as good as at Falkenstein.

(b) *Ameliorative*.—It is much easier to demonstrate the improvement which follows sanatorial treatment than to exhibit cures. Of 2,101 patients treated at Newcastle during the ten years, 1897-1906, 1,620, or 77.1 per cent., were improved to a greater or less degree. They were classified in the Medical Reports for these years as follows:—190 as "very much improved," 585 "much improved," and 845 "improved."

(c) *Educational*.—Each patient on his return home becomes a prophet in the prophylaxis of tuberculosis in his own district. His confidence in the value of fresh air and his advocacy of open windows will be strengthened and stimulated by the occasional visits of a nurse, who will encourage his practice and support his arguments. In this way, so far as Dublin is concerned, the visits of the tuberculosis nurses from the Women's National Health Association to former Newcastle patients should prove invaluable. Pending the appointment of similar nurses in other parts of Ireland, much good would be done if arrangements could be made with the Jubilee Nurses and Lady Dudley's Nurses for keeping in touch with patients who have had a course of sanatorial treatment, and have returned to their homes in the country.

Sanatoriums can play an important part in the eradication of tuberculosis, but many years must elapse before they can produce any manifest influence on its prevalence or mortality except some provision is made for advanced cases. A place for dealing with these very dangerous and infectious cases must form a part of any well-considered method for the eradication of tuberculosis. So far, in Ireland no public health authority seems to have given the necessary amount of attention to the isolation of these cases. No general hospital



wants advanced cases of phthisis. If admitted they occupy for weeks or months beds which would otherwise have been available for the reception of patients capable of cure or alleviation. Very advanced cases may be admitted to the Royal Hospital for Incurables, the Hospice for the Dying (Harold's Cross), or the Rest for the Dying, Camden Row. The names of these valuable institutions, though accurately describing their purposes, have a deterrent influence on a man advised to enter one of them, because he is not willing to admit, so long as he can walk about, that his case is hopeless. He would, however, willingly enter a home or sanatorium for advanced cases.

It may be possible in the near future for the Poor Law authorities of one or two counties to combine, with a view to employing one of the workhouses by transferring the inmates to other unions. At a comparatively small cost the workhouse could be transformed into a hospital for advanced cases. Treatment should be on sanatorial lines, and an occasional case might recover sufficiently to justify its transfer to the sanatorium for early cases.

The establishment of sanatoriums for early cases and homes for patients with advanced disease, with the general adoption by the Irish people of sanatorial principles, would bring about in the course of a generation a marked diminution in the prevalence of tuberculosis, and hasten the day when Ireland would be as free from tuberculosis as she is to-day from leprosy.

CONCLUSIONS.—1. Tuberculosis is not a hereditary disease, but is developed under suitable conditions of seed and soil.

(2) The seed is the tubercle bacillus, and the soil is men, women, and children of low resisting power.

(3) The seed is found in great abundance in the expectoration of patients suffering from consumption.

(4) Deficient resistance may sometimes be hereditary, but is generally acquired by living under unhygienic conditions.



(5) The prevention and cure of consumption consist in destroying the seed and increasing the resistance of the soil.

(6) Sanatoriums are institutions for teaching people how to collect and destroy the seed by devoting special care to the expectoration, and to increase their resisting power by suitable food and by living under the most healthy conditions.

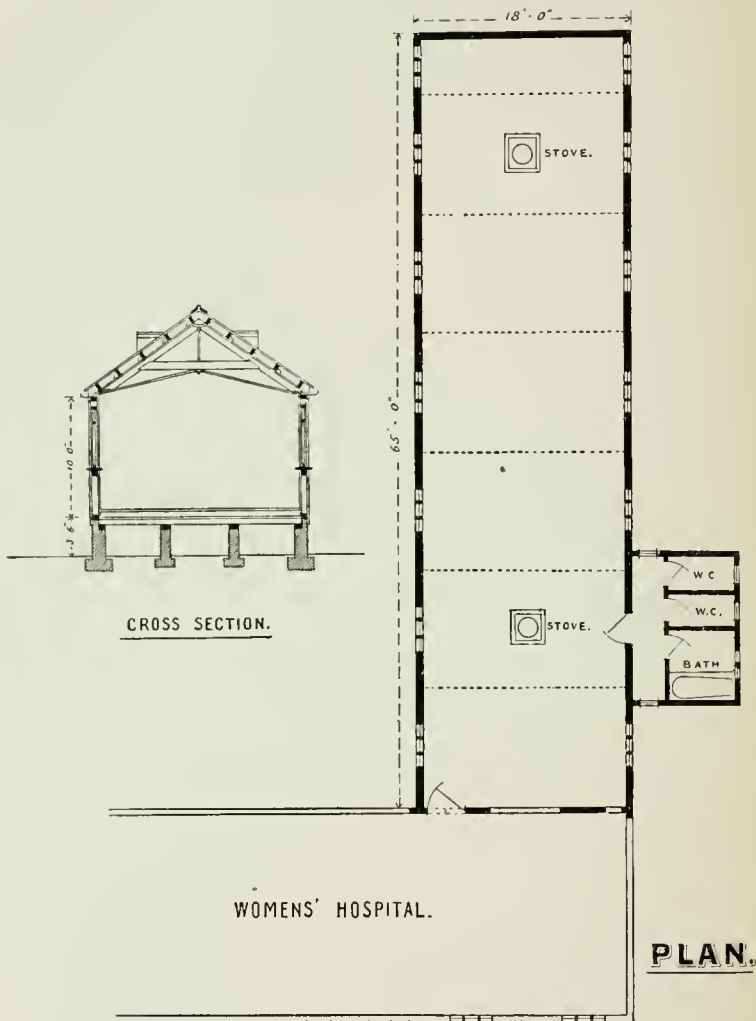
(7) A fully-equipped sanatorium capable of accommodating 60 patients can be erected for about £6,000.

(8) The annual expenditure in maintenance will be about £3,600.

(9) An estimation of the results of sanatorial treatment should include not only cures but also its ameliorative and educational influences.

(10) Sanatoriums are primarily intended for early cases, but no scheme for the prevention of tuberculosis can be regarded as complete which fails to deal with advanced cases.

(11) The establishment of institutions of such a name and character that patients in an advanced stage of consumption will willingly enter them is essential if a successful struggle is to be waged against tuberculosis.



Scale, 16 feet to 1 inch.

NEW WARD FOR WOMEN, IN WOMEN'S CONSUMPTION HOSPITAL,  
SOUTH DUBLIN UNION.

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# SANATORIA AND TUBERCULOSIS DISPENSARIES

By DR. FRANK DUNNE, Physician in Charge of the Tuberculosis Hospitals, South Dublin Union, and Medical Superintendent, Sonas Sanatorium, Kilcoole, Co. Wicklow.

THE MOST REV. DR. DONNELLY, BISHOP OF CANEA, in the Chair.

IN dealing with the evil of Tuberculosis so much requires to be done that the greatest care is necessary in making recommendations so that the essential points shall receive their proper prominence in any scheme which may be drawn up for combating this dread scourge. The solution of so vast a problem can only be hoped for by means of a carefully-organised and co-ordinated plan of action. This plan should, as far as possible, be uniform throughout the country. Such an organised and co-ordinated scheme of operations against tuberculosis must, in my opinion, include the following factors :—

1. Compulsory notification of the disease.
2. A tuberculosis dispensary.
3. Sanatoria for the treatment of curable cases.
4. Hospital accommodation for the isolation of advanced, highly infectious, and incurable cases.
5. The proper inspection of food supplies, and in particular the bacteriological examination of milk.

Those who have followed the course of the proceedings at this Tuberculosis Exhibition will have noticed that from its inception there was an irresistible demand for compulsory notification. This question has been ably treated by most of the lecturers who have had the honour of addressing you during the last three weeks.

I need not further refer to it, except to place compulsory notification first among the essential requirements.

#### THE TUBERCULOSIS DISPENSARY.

Though absolutely unknown in Ireland as a factor in the campaign against tuberculosis, the dispensary is no longer on its trial. In Germany, France, and Belgium a very large number of similar institutions have been erected in the past few years. The International Congresses of Paris and the Hague were unanimous regarding their utility. I have myself been present at Professor Deny's dispensary in Louvain, where as many as fifty patients suffering from various forms of tuberculosis were treated in one morning. Professor McWeeney, in his admirable and lucid address, to which you had the pleasure of listening a few nights ago, told you how the tuberculosis dispensary was worked in Berlin. But in this instance, at least, we need not go to Germany or other foreign countries, where it might be urged the conditions were not the same as in our own country, but we have in the Victoria Dispensary for Consumption in Edinburgh, founded in 1887, an example of the work that can be done in a city under similar conditions to those which exist in our midst.

The details in these different institutions vary somewhat, but in general the programme of the Edinburgh Dispensary will give a fair idea of the aim of a tuberculosis dispensary.

1. The reception and examination of patients at the dispensary, the keeping a record of every case with a brief account of the history, surroundings and present condition, the record being added to on each visit.

2. The examination of expectoration, &c.

3. The patients are instructed how to treat themselves and how to prevent the infection of others.

4. The dispensing of necessary medicines, sputum bottles, disinfectants, &c.

5. The visitation of patients at their own homes by an expert medical man and a specially trained nurse for the purpose of treatment, and inspection of the dwelling and

general conditions of life, and the risk of infection to others.

6. The selection of patients—(1) early cases for sanatoria, (2) incurable cases for hospital.

7. The guidance generally of tuberculosis patients and their friends, and for inquiries from all interested persons on every question concerning tuberculosis.

#### MEDICAL OFFICERS AND NURSES.

One of the medical officers pays domiciliary visits to the dwellings of patients in co-operation with the trained nurse, and he makes bacteriological examinations of expectoration and other discharges. By arrangement with the city authorities he notifies all cases of tuberculosis which he meets, he advises regarding the disinfection of houses or rooms during illness and after removal or death of the patient. He supervises treatment of patients at their own home when this is possible. He selects suitable patients for the sanatorium. He sends more advanced cases to the hospital.

The nurse, who has been trained in modern open-air methods, visits the homes of the patients. She instructs the patients or their friends both as to treatment and prevention. In co-operation with the visiting physician she reports regarding the patient's residence and other conditions according to a schedule of inquiry regarding dispensary patients.

No. in Ledger	.	Date of report	
Name			Age
Address			
Married or single			
Occupation			
Has patient changed occupation?			
Able to work full time			
If unable, confined to bed			
Situation of house (1st, 2nd floor, &c.)			
Number and ages of inmates			
Number and description of rooms			
General aspect of house (clean, damp, dusty, smelly)			
Number of windows		Can they open?	

Are they kept open (a) by day?

(b) by night?

Have they always been kept open?

Does patient sleep alone (a) in bed?

(b) in room?

How is the washing of clothes done?

How long in present house?

Has he moved within two years, previous addresses?

### RESULTS OF DISPENSARY OPERATIONS.

So far from the visits of doctor or nurse being resented by the patients, they have been gladly welcomed, and their inquiries cheerfully answered.

Each year some 17,000 attendances have been recorded. By means of the systematic record of the home conditions valuable information has been accumulated regarding the incidence of the disease in the area covered. For example—the extreme frequency of tuberculous disease in children and housewives has been clearly demonstrated, the frequency of the disease in certain houses and streets, its occurrence along with various insanitary conditions (insufficient air, absence of sunlight). The reports show the frequency with which one or more persons share a room or even a bed with the consumptive patient—in these cases either the patient can be removed to hospital or sanatorium, or the unaffected to healthier surroundings. The doctor in such circumstances would examine into the health of other members of the family. It is remarkable how frequently one or more persons not previously suspected have thus been shown to be tuberculous.

The consumptive patient frequently changes his house—infected areas thus being quickly multiplied. The records also show, in the absence of the dispensary, how frequently those areas would escape disinfection.

To my mind one of the most important functions of the tuberculosis dispensary is that it removes all tubercular patients from the waiting-room of the general dispensary, where otherwise they would remain, perhaps

for hours, in close personal contact with others whose state of health rendered them extremely susceptible to infection by the tubercle bacillus.

The early diagnosis of cases of tuberculosis can best be secured by the tuberculosis dispensary.

I cannot sufficiently emphasise the importance of early recognition of tubercular disease. It is absolutely beyond all doubt that early stages of tuberculosis can be cured in a vast majority of cases. As showing the importance of early recognition of the disease, I may mention that of upwards of nine hundred cases of tuberculosis in various forms admitted to the South Dublin Union for the year ending 30th September, 1907, less than 14 per cent. presented any prospect of cure, either because the disease was not discovered in time or else they did not seek treatment until it was too late. The prevalence of tuberculosis amongst children is, perhaps, best brought home to us by Müller, of Munich, who found that in five hundred autopsies on children, dying from all causes, under fifteen years of age, 40 per cent. showed the presence of tuberculosis. These figures are fully borne out in our own country, as is shown by the number of deaths of children under fifteen years of age in the South Dublin Union for the year ending 30th September last. The total number of deaths was 152. Of this number 54 died from tuberculosis in one or other of its numerous forms.

I will now assume that I have proved the necessity for a tuberculosis dispensary, and devote a few lines to its cost.

The Victoria Dispensary for Consumption in Edinburgh cost for the year ending 31st March, 1907, £493 19s. 2d. This is very little when we consider the amount of work that had been done; still I think it could be reduced considerably by utilising some of our existing dispensary buildings, either on days or at hours when they would not be required for the general dispensary. It should also be remembered that these patients will no longer be a source of expense to the general dispensary, nor will they be a charge on the rates, as long



as they live by occupying beds in the hospitals, as a considerable number of them will be restored to health and earning capacity.

I am indebted to Dr. Philip, of the Royal Victoria Hospital for Consumption, Edinburgh, for much valuable information on tuberculosis dispensaries.

#### SANATORIA FOR THE TREATMENT OF CURABLE CASES.

##### *The Material Wood and Iron.*

It has been estimated that about 4,000 sanatorium beds are required for Ireland. If each county had a sanatorium with an average of 100 beds the larger towns like Dublin, Belfast, Cork, and Limerick could easily make up the difference. The vital question is the cost of sanatoria, both as to cost of building and maintenance. I have recently had an estimate from Messrs. Spiers, of Glasgow, for a building to accommodate fifty-eight patients, divided into six wards, with lavatories and bath rooms, an administration block consisting of consulting room, lavatory, two nurses' duty rooms, dining-room, kitchen, scullery, larder stores, &c., the whole heated with hot water, lavatory fittings with hot and cold supply, all ready to join to water supply and drainage outside the building—in fact ready for occupancy—for £1,639, or less than £25 per bed.

I expect an Irish firm of contractors could erect the building as cheaply as the firm whose estimate I have quoted.

That this class of building is suited to the purpose is proved by the fact that the Scotch Local Government Board have repeatedly sanctioned similar buildings, and several of them built by Messrs. Spiers, whose estimate I have quoted. My female tubercular hospital in the South Dublin Union was erected twenty years ago of wood and iron on a brick foundation, and is, I am informed, good for another twenty years. Several views of this hospital are included in my exhibit in your Tuberculosis Exhibition. This building, with accommodation for sixty patients, with dining-room, kitchen,

surgery, laundry, bath-room, lavatories, &c., cost £1,200, and the Board of Guardians have recently added additional accommodation, also in wood and iron, for twenty-eight patients at a further cost of some £300.

*The Cost of Maintenance.*

In working-class sanatoria this varies from £65 per bed per year to the more reasonable figure of £39.

The male tubercular hospital of the South Dublin Union, with seventy-two beds, costs for maintenance 9s. 5d. per bed per week, or £24 9s. 8d. per bed per year. This sum includes feeding, wear and tear of clothing and bedding, medicines, stimulants, gas, coal, water, salaries of officers, &c., and, in addition, the cost of feeding, clothing, and bedding of eighteen unpaid attendants. It does not include medical attendance, as this is only part of my work. A large number of my attendants are former patients, but as they are unpaid, and besides we have the advantage of being part of an establishment of over 4,000 inmates, and, consequently, have very large contracts, I think it wise to estimate that the weekly cost per bed would be 15s., or £39 per bed per year. As showing that this low cost of 9s. 5d. is not obtained at the expense of the welfare of the patients, I may mention that last year the average increase in weight of twenty-four of my patients while under treatment was 1 stone 5 lbs. I do not attribute my success, however, either to the position of my hospital or the good feeding of the patients, though both these are valuable adjuncts, but to the systematic treatment of the disease by Professor Deny's tuberculin, which I have been using in my hospital for over three years.

A few words as regards cost.

A sanatorium with one hundred beds, allowing the rather large average of four months for each patient, would provide for three hundred patients each year at a cost of £13 os. 4d. each; and let me remind you that if not treated and cured in a sanatorium a very large

number of these patients will find their way into your workhouse infirmaries, and will cost the rates far more than £13 before they die.

#### RESULTS OF SANATORIUM TREATMENT.

The results of sanatorium treatment are highly encouraging notwithstanding statements made from time to time to a contrary effect. Dr. McWeeney showed you some diagrams to illustrate the results achieved by one of the large German sanatoria, and exhibiting the number of patients who are able to work even five years after they have left the sanatorium.

If treatment be commenced reasonably early, it is the exception to find the patient who does not progress persistently, as long as treatment is maintained.

Sanatoria should be founded in immediate relationship to the large centres.

It has been demonstrated in the most conclusive way that, just as consumption occurs in all countries where the disease has obtained a footing, "it can be treated in all climates with approximately equal success, or want of success, according as the larger indications for treatment are fulfilled or overlooked" (*vide* Dr. Philip).

#### HOSPITAL FOR ADVANCED CASES.

There can be no manner of doubt that the advanced or dying cases constitute the gravest source of infection. This is especially true in the case where, perhaps, an entire family shares a room with the consumptive patient. All such patients should be immediately removed to hospital.

Some of the disused workhouses, which will be free when the scheme of amalgamation proposed by the recent Viceregal Commission is carried out, may in many cases, serve, with slight alterations, as consumption hospitals for advanced cases. Portion of the city hospital or the workhouse infirmary might also be set apart for advanced cases. Patients sent to such hospitals should not be discharged, but should continue in the hospital until the end.

## INSPECTION OF FOOD SUPPLIES.

We should agitate continually for further legislation to more efficiently control the meat sold to the poor of our cities, and, despite recent sensational pronouncements on this point, we should not rest satisfied until it was impossible to procure tubercular meat in any of our city markets.

Infection by tuberculous milk is undoubtedly a frequent, if not the chief, cause of tuberculosis in children. To my mind, the remedy for this state of affairs is simple. While we are waiting for legislation to sanction the compulsory slaughter of cattle suffering from tuberculosis, could we not utilise the powers conferred by the Food and Drugs and other Acts, and have all milk supplied to public institutions, schools, &c., bacteriologically examined, and punish any contractor supplying milk infected with tubercle? Punishment is inflicted on anyone exposing for sale meat, fish, &c., unfit for human food. There is a penalty for selling milk diluted with water or deprived of its fats. Might not the sale of milk infected with the germs of tubercular disease be dealt with in the same way? Surely there would be no injustice to milk producers in following this course. Every farmer who knows his business can recognise a tuberculous cow. If he cannot he should attend a course at the Royal Veterinary College before he embarks as a dairy farmer, and has the opportunity of ruining the lives or causing the deaths of our helpless children. The Agricultural Board could assist in this matter by placing the services of their veterinary inspectors at the disposal of any farmer who wished to have his cattle inspected for tuberculosis.

Before I close I should like to pay a tribute to the Board of Guardians of the South Dublin Union who, as the premier union of Ireland, were the first Poor Law Union to provide isolation hospital accommodation for their tubercular patients; and with the sanction and encouragement of the Local Government Board have provided a special tubercular diet and defrayed the entire cost of Professor Denys' tuberculin, which I have used for the past three years. Though they have not yet

been able to provide a sanatorium I trust that, with the co-operation of their representatives on the Dublin Joint Hospital Board, they will soon be able to render this service to the suffering poor.

#### CO-ORDINATION OF MEASURES.

The subject is an immense one, and, in the time at my disposal, I have only been able to lightly touch on several of what I consider are essential points in the campaign against tuberculosis. While every portion of the organisation against consumption is dependent on its neighbour, I look upon the tuberculosis dispensary as at once a developmental centre and uniting point of other agencies. For the maintenance of such a scheme it is impossible to trust entirely to private enterprise. It is essentially a matter for public bodies. If the issue be placed clearly before the citizens I am confident they will cordially support any reasonable measure devised, not merely for the limitation, but for the final extinction of tuberculosis.

THE REV. T. A. FINLAY, S.J., in proposing a vote of thanks to Dr. Dunne, said: They owed to Dr. Dunne not merely the enlightenment which he had conferred upon them that evening, but also the brilliant example set in his own profession of the valuable work which might be done in the cause of the poor by a devoted public servant. Dr. Dunne had introduced to the South Dublin Union methods for the treatment of this dread disease of tuberculosis, which had been productive of the most remarkable results. No doubt the isolation hospital there had not all the advantages of a sanatorium situated in a pleasant rural locality, and enjoying the advantages of sea and mountain air, but such advantages as could be secured by generous expenditure, and the most thoughtful care of the poor within the borders of the great city, were undoubtedly provided in abundant measure for the patients there, by the generosity and thoughtfulness of the Guardians of this Union.

PROFESSOR THOMPSON seconded the vote of thanks, which was supported by the Sub-Dean of the Chapel Royal, and passed with acclamation.

# SOME POPULAR OBJECTIONS TO SANATORIUMS ANSWERED

By DR. LEOPOLD A. HARE, Medical Superintendent,  
Larch Hill Sanatorium, The Pine Forest, Co.  
Dublin.

HER EXCELLENCY THE COUNTESS OF ABERDEEN in the  
Chair.

IN all ages and at all times one of the most universal, but, perhaps, one of the most excusable, frailties of human nature has been the fear of the unknown. It is the child's dread of the dark—the intangible nothing is more terrible than the visible reality. Even in this enlightened age we meet evidences of such weakness in all around us. In everyday life we look askance at people and things, until we have tested them and tried them, and in nine cases out of ten there is a lurking fear, a suspicion, a dread of any person, or institution, or principle that is new to us. After a time, however, the unknown becomes the known, the new becomes the old, and we begin to realise that our fears were groundless, that the terrible was not the terrible at all, but only the unfamiliar, and that the person, or institution, or principle is actually a blessing rather than a curse. Now, many people in this country look upon sanatoriums and sanatorium treatment with suspicion, with scepticism, almost with dread. They are full of objections to them, full of fears about them—in short, they are deplorably ignorant concerning them; nor can they be blamed for such ignorance. Sanatoriums in Ireland are comparatively new, though they have long been established in other parts of the world. In time, however, the Irish public will learn to appreciate the priceless boon which they confer upon



humanity; but in the meanwhile it is the duty of the medical profession "to point the moral and adorn the tale" which shall lead the suffering consumptive to rest, and treatment and cure. But the first step in the education of the public is a peculiarly difficult and delicate task. It consists in the uprooting of ideas, in the eradication of prejudices and in the destruction of traditions. As soon as the public sees or hears of anything new it forms its own opinion upon it. It will tell you all about it. It is a fad! It is an absurdity! It is an extravagance! It is an abomination! So it is with sanatoriums. The public will tell you all about them; the public has formed its own opinions concerning them. But those opinions are mostly wrong; not only wrong, but pernicious. The public distrusts sanatoriums, has fears of them and objections to them. It is these fears and objections and opinions which, to-day, I shall endeavour, with as few technicalities as possible, to uproot and destroy.

The following are the chief objections raised by patients and their friends to sanatoriums and sanatorium treatment:—

1. The Fear of Infection.
2. The Fear of Exposure to all Weathers.
3. The Fear of Feeding and Over-feeding.
4. The Fear of Depression.
5. The Fear of Strict Rules.
6. The Fear for the Future.
7. The Fear of the Disease being Incurable.

The first and, perhaps, the most widely-distributed objection is the FEAR OF INFECTION. How such a preposterous fear ever arose in the public mind it is difficult to conceive; but it is there, and should be attacked. It may be that "a little learning is a dangerous thing," and the public, having recently acquired the knowledge that tuberculosis is infectious, at once jumped to the conclusion that where tuberculosis was treated, there tuberculosis must be the most infectious. This, how-



ever, is a false conclusion and a grave mistake. Tuberculosis is infectious, but never in places where the laws of sanitation and hygiene are observed. Now, in sanatoriums every possible preventative and precaution are taken to destroy and hinder infection. Every known means is employed to render the tuberculous germ innocuous. The patients' sputum, which contains the poisonous microbe, and is the most fruitful source of infection, is watched, and sought for, and hounded down to its death with untiring vigilance and perseverance. The most stringent rules are enforced against spitting about the buildings or grounds, and any patient found indulging in such a practice would only repeat it upon pain of instant dismissal. Every patient is provided with a spittoon at his bedside, containing a disinfectant, and when he is up and about, with a portable flask also containing a disinfectant; so that at the moment of its ejection from the lung the microbe meets with instant destruction. Nor is this enough. Precaution even further out-Herods itself. The contents of these spittoons and flasks are emptied twice daily into a large receptacle, where they are further subjected to processes of sterilisation by means of boiling with chemicals or exposure to steam at a pressure of twenty pounds to the square inch, or are mixed with peat or sawdust and burnt, lest, peradventure, there should be found one living microbe amongst them. The same routine of disinfection and annihilation follows the bacillus throughout the day. The pocket-handkerchiefs used by the patient are of a specially cheap kind, and are burned immediately after use. His dinner napkins are of the Japanese paper variety, and are also burned. His spoons, his forks, his plates, his dishes, his cups and saucers are all disinfected after every meal, and washed up separately and apart from those of the staff or any visitors in the establishment unaffected by the disease. Is all this done for the fastidious man in the street in any hotel or dining-room he frequents? Who can be certain in ordering a cup of tea in a public eating-house that the individual

who drank from that cup a few minutes before was not a consumptive with microbes in his sputum and on his lips and about his moustache? The cup may be perfectly clean in the ordinary sense of the word, but it is not disinfected. Again, the clothes of each patient are washed and disinfected in special laundries attached to the sanatorium. The room or *châlet* in which he sleeps is disinfected before his arrival, and again after his departure, for the next occupant. The furniture and walls of that room are rubbed down with a two per cent. solution of chloride of lime—a disinfectant which has been proved by Delapine to effectually destroy the tubercle bacillus. The floors are cleansed daily. The whole architecture of sanatoriums, with their oil-painted and polished walls, their carpetless floors, their large curtainless windows, their rounded corners, are antagonistic and inimical to the development or existence of germs of disease. And yet the man in the street, and not only he, but people who display education and common sense in other directions, fight shy of sanatoriums, hold up their hands in horror at the thought of them, regard them as breeding-grounds of all that is pestilential and putrefactive. I am acquainted with a lady of good education, the wife of a professional man, who visits us socially two or three times a year, but who, all the time, is in the greatest perturbation of spirit and on tenter hooks to get away for fear of infection, and who, of her own accord, confessed to these feelings to one of my household. Not long ago a gentleman hesitated about sending his son for treatment on the ground that he might become infected, and this, though he was fully aware that the son had already bacilli in his sputum. I was speaking to a professional man a short while back upon the subject of sanatorium open-air life, and he concurred with me as to the advantages and desirability of such a life. "I should like to visit you myself," said he, "were it not for the danger of infection"! I could not refrain from laughing. "And yet," I replied, "you travel in smoky railway carriages every day, you

go to your work in over-crowded trams, you take cabs, you eat in restaurants, you spend hours in crowded, ill-ventilated buildings such as churches and theatres; but to put your nose into a sanatorium, where everything is clean, everything disinfected, every germ destroyed—no! oh! no! that would be suicidal.”

Let us see what statistics say. I quote from Dr. Walther's book—“Sanatoria for Consumptives.” Upon this point he writes as follows:—“The experience of chest hospitals and sanatoria both here and abroad shows that there is absolutely no danger if simple precautions are observed. At the Brompton Hospital careful inquiries, extending over a period of thirty-seven years, were made by the late Dr. Cotton and Dr. Theodore Williams as to possible infection from patients. The old building was very badly ventilated, nevertheless none of the resident medical officers, matrons, gallery maids, porters, or secretaries and clerks became phthisical, although most of these were brought into frequent contact with the patients. Out of about one hundred and fifty house physicians only one appeared to have contracted the disease in hospital. Out of one hundred and one nurses three died of consumption after leaving the institution, but in only one did the disease show itself while in hospital. Of twenty-two dispensers, three died of phthisis—one while in the building—and two of these dispensers held office for twenty years.” Similar investigations by Heron at the City of London Hospital for Diseases of the Chest also failed to prove infection among the attendants. No case has ever been reported from any modern chest hospital which takes even elementary precautions concerning the sputum. Aufrecht states that at the hospital of Madgeburg-Alstadt 34,560 patients were received during a period of seventeen years, of whom 3,820 were phthisical, mostly in an advanced stage, but none of the other patients and none of the large nursing staff ever became consumptive. One word more upon this point. I have kept it till the last because it is most important. It has been proved

conclusively by Koch, Ransome, Cornill, and others that daylight and direct sunshine, especially in the presence of free ventilation, kill the tubercle bacillus. It cannot live when exposed to fresh air. Now, sanatoriums are built, or should be built, in mountainous districts. My own stands at an elevation of 800 feet. They are constructed with large windows, which are open night and day. At such high levels the air is pure. It contains only a very minute quantity of carbonic acid gas—about three parts in ten thousand. It contains none of the germs of diphtheria, typhus, influenza, &c., which we find in towns and at low-lying levels. It is fresh, pure, buoyant, and invigorating. When the tubercle bacillus meets such air as that it dies—it must die, there is no help for it. Even sanatorium doctors cannot save its life in air like that. The medical profession has taught the public that consumption is infectious, and the thanks that the public has returned to the profession is to say—"Very good, then, you are the most infectious of the lot." Perhaps those who are here to-day will give us a better character in the future.

The second popular objection to the sanatorium treatment is the FEAR OF EXPOSURE TO ALL WEATHERS. I have heard wondrous tales from a variety of sources about our cruelty in this respect. Many patients appear surprised when first admitted that the treatment is so moderate. I learned from one the other day that his friends informed him he would be left out all night under the rain without any covering. From another that to have the bedclothes blown off the bed several times during the night was quite a common occurrence, or to wake up in the morning to find a snow-drift on your pillow would be hardly worth mentioning. Now, all this is an absolute bugbear. Go outside on the village green and examine those chalets constructed specially for the use of the consumptive patient. Everything you will see has been thought of to promote his comfort. Imagine yourself in bed in one of those, with a soft, springy, wire-woven mattress under you, warm

blankets and an eider-down over you, a scorching hot bottle to your feet, and plenty to eat and drink—all of the best. Well, I don't pity you very much, even if the tip of your nose is exposed to the mountain air. And later, when you are able to be up and take a little exercise, or recline on a couch, you have rugs, and overcoats, and umbrellas, and rubber snow-boots, and the inevitable hot-water bottle, all day long to console you. Does that sound like hardship or cruelty? True it is that we endeavour to accustom our patients as soon as possible to the open-air life, and to nature's variations in the atmosphere, but there is no hardship, and certainly no cruelty, about it. To be constantly in the open air is far less hardship than to follow the artificial existence of the town dweller, who stews over a fire in a close gas-lighted sittingroom, and then suddenly plunges himself into an outside temperature 30 or 40 degrees lower. That is a hardship that it would require very vigorous lungs to withstand. But in sanatoriums we are dealing with delicate lungs, and, consequently, we do not subject them to such sudden and dangerous changes of temperature. We keep them constantly, night and day, in the open air, and allow nature herself to alter the temperature, which she always does gradually. In that way even the most sensitive patients soon become accustomed to open-air conditions, and it is with the greatest reluctance that they return eventually to the ordinary town life, where such conditions are impossible, or, at all events, inadequate. But the exposure must be constant! Herein lies the secret and the safety of open-air treatment. The exposure must be constant! and for invigoration, recuperation, and health, there is no life like it. Of course, in this, as in all branches of medical science, discretion must be employed by the physician—discrimination must be used. Individuals and idiosyncrasy must be studied. Patients with extensive disease cannot stand what would benefit an early case. What is stimulating at twenty might be depressing at fifty, and so forth; but, nevertheless—and here I quote from Dr.

Latham—"The patient's life, not only when in the sanatorium, but for ever afterwards, depends upon his becoming habituated to an open-air life and to every and any degree of inclemency." A strong wind and dust are the only two climatic conditions which the consumptive should dread. A strong wind is injurious because of the dyspnœa, or shortness of breath, which it excites, and the loss of heat which results from a great amount of air passing rapidly over the body; dust because of the foreign particles that fill the lungs and produce irritation and obstruction. Any other atmospheric condition is harmless, and the sooner the patient becomes accustomed to all changes of weather the better for himself. All that you are asked to do is to breathe pure air into the lungs, and not persist in poisoning them for ever with air that other people have breathed. I would sooner wash in the water that other people had washed in than breathe the air they have breathed. Yet you are doing it every day.

Another bugbear of the public is the so-called OVERFEEDING in sanatoriums. They will tell you dreadful stories of patients who were threatened with instant expulsion for refusal of food, of patients who were stuffed until they were unable to move, and then stuffed again, after the manner of the ancient Roman banquets. Now, I have no doubt that these tales are very alarming to the lay mind, but that is because the lay mind has heard only half the story. Let me tell the sequel. The word "phthisis," which is synonymous with pulmonary tuberculosis and consumption, is derived from the Greek word *φθιῶ*, which means "I waste." The ancients regarded the progressive wasting which characterises the disease as one of the most important symptoms of it. The more usual word "consumption" embodies the same idea—the patient is consumed or burned up. All authorities are agreed in recognising the presence of this symptom. Dr. Frederick Taylor says—"Emaciation is the rule in phthisis; it may be one of the earliest symptoms, and may give a note of warning." Now,



there is one way to check this progressive wasting—to put out the fires of fever that are burning up the patient—and that way is by feeding. I do not mean feeding as it is ordinarily understood to meet the requirements of healthy individuals, nor do I mean feeding as the public regards sanatorium dieting—a process of daily stuffing and gorging. I mean a systematised dietary—a scientific dietary—a measured-out dietary, which gives the greatest possible nourishment to each patient, with the least possible effort on the part of the digestive organs. Enrich the patient's blood, sustain his strength, and you help him to combat the disease. Dettweiler, the great German, of Falkenstein Sanatorium, when asked if he employed many drugs in the treatment of consumption, pointed to his kitchen, and replied—"That is my pharmacy; there is my chemist's shop"! This systematised feeding is not necessarily over-feeding—it should not be called over-feeding—perhaps pathological alimentation would be a better term, for it is really and truly feeding the sick. It is feeding the disease as well as the patient, and not until the disease is fed will the patient improve. I do not hold with the extremes of stuffing, but the consumptive patient *must* take a greater quantity of food than a patient suffering from any other ailment, or than a person in normal health. Food—good, rich, sustaining, and nourishing food in large quantities—is his medicine, and his only medicine, for there is not a drug in the British Pharmacopœia that will effect the same beneficial results. It has been positively demonstrated by Walther, of Nordrach, that the readiest and most efficacious way of reducing the fever of consumption, however high, is by means of a sufficient quantity of solid food." During my own illness, extending over a period of ten months, I have several times observed this fact—having found my temperature fall more than half a degree after a full meal of solid food. The necessity of this feeding is so fully recognised that it is usual in almost all sanatoriums for the doctor to take all meals with his patients. A few years ago I took the



opportunity of visiting the principal sanatoriums in Germany—Hoenhounef, Falkenstein, Nordrach, and others. At Nordrach, where I spent some time under Dr. Walther for the purpose of studying his methods, the doctor took all meals with his patients, and insisted on the plates being emptied. One day I left something on my plate as a test. I waited to see what he would say. I never did it again. He is a German. He spoke five languages fluently, and could swear in any one of them. Nevertheless, we all loved him. At Larch Hill I am present at all the meals, and I serve each patient myself. I do not swear at them, but—well, I am thinking of learning Irish. Thus, by dining with your patients you can be sure that each one is taking his appointed nourishment, and I have always found that patients are reasonable, amenable, and obedient to the last morsel. I have mentioned these facts to explain to you the vital, the awful necessity, of food, and how much the life of the patient depends upon its acceptance and assimilation. “But,” you say, “he has no appetite! How can a man partake of such a dietary who has no appetite?” Ah! there you make a serious mistake. A very constant symptom of consumption is loss of appetite. And, worse still, positive revulsion to food. Perhaps it has never struck you that appetite is an attribute of health! There are morbid appetites, no doubt, the results of disease, but these are rather perversions than true appetites. But appetite—the good old-fashioned ploughman’s appetite—is only found where health exists, and is an attribute of it. All appetites are the result of health. The appetite for work, for sport, for love itself, are only compatible in their truest forms with sound health. No man, even the keenest sportsman, could enjoy a day’s fishing or shooting were he suffering from enteric fever or ague; and I defy the strongest amongst us to make love successfully while squirming under the pangs of toothache. No! the appetite for these things would be gone. He would sooner be left alone in his misery, however plentiful the game or

charming the lady. So it is with consumption. The patient is ill, very ill, the vital processes are benumbed, vitiated, poisoned. It is insanity to suppose that he would, should, or could have an appetite, and yet people come to us every day with their sick friends and say—"Oh, doctor! he has no appetite"! Of course, he has no appetite. I don't expect him to have an appetite! But am I to leave him there to die without an appetite? He is wasting away! The fever that is in him is burning him up, just as a match burns up when it is struck. Every day there will be less and less of him. Yes! literally and absolutely less of him! Weigh him week by week and there will be less of him! Look at him day by day and he grows thinner and thinner. There is less of him! Every time he expectorates there is less lung left behind; there is more tissue destroyed and ejected. It is a horrible thought, but it is literally and absolutely true. And he has no appetite, and because he has no appetite you will not feed him. Do you blame me if I feed him? Do you blame me if I sit by his bedside and implore, cajole, reason—aye, almost command—that man to get him to eat? Do you blame me if I administer his food, weighed and measured to his exact requirements, and insist upon the last morsel being finished? If the stomach rejects it it is because the stomach itself is starved; it is merely reflex upon the part of the stomach. There is no nausea mingled with that rejection. It is not the sickness of sea-sickness, or of migraine, or of biliousness—there is little or no unpleasantness about it. It is easy for the stomach to fill up again, and I have had many patients who, of their own accord, have asked for a second dinner after such rejection, and eaten it willingly. But in any case in which this occurs the stomach must not be left empty. The patient's life depends upon his eating. This is why we over-feed, as it is called. This is the explanation of the horrible stories you have heard.

Dr. Burney Yeo says—"Unless this progressive wasting is counterbalanced by the supply and annexation

of an adequate amount of food, the patient must, in course of time, succumb to the disease."

Dr. Burton-Fanning says—"It has been demonstrated that satisfactory progress is not made if the patient's natural appetite and inclinations alone regulate the amount of food taken."

Dr. Latham says—"Patients seldom have any difficulty in eating the necessary quantities; if they have, they must be made to eat what is given them, even if they take two or more hours in doing so."

That is the reason for full feeding. You must feed the disease as well as the patient! That is the reason why in Larch Hill I never allow the word "appetite" to be used. We always speak of capacity! And the wonderful part of it all is that with convalescence the appetite returns, and when the patient goes back to his friends he eats them out of house and home.

THE FEAR OF DEPRESSION AND THE FEAR OF STRICT RULES.—I have no time to give these two objections more than a passing reference, nor, indeed, should they require it. They are too utterly ridiculous and futile for more. In regard to patients becoming depressed, it is well known that consumptives are a proverbially hopeful community. I frequently have had to check exuberance on the part of the younger patients—though much against my will—lest too much laughter and activity would bring on a hæmorrhage. I have seen only one patient who suffered from well-marked depression, and he had a bad alcoholic history.

As for raising objections to strict rules, it is preposterous! One might as well turn and revile the surgeon who puts his patient in splints for a broken leg. Splints are not convenient, they cramp your style, but they give the broken bone a chance to unite. Sanatorium rules are the splints that we put on. We keep you a while in bed, and put you to rest on couches. We restrict your walks at first. Why? Because we want to give your unfortunate lungs a chance to heal. And for all this you object to sanatorium rules! Nowadays people will

put up with nothing; they want to burn the candle at both ends, and they think everything ought to be cured in a week by tabloids. But let me tell you this—the stricter the rules, and the more closely you observe them, the sooner you will get well!

By "THE FEAR FOR THE FUTURE" I mean that oft-repeated question—"What is the patient to do when he returns home?" In some cases, although to all intents and purposes he is cured, nevertheless he may be unable to resume his hard mental labour or take up his former regular employment; or, again, he may be able to do so for a time, but eventually may break down. He even, perhaps, becomes a burden to the ratepayers. What is the patient to do? What an immense amount has been made out of this question? With many people it is the main objection to sanatoriums. "You arrest the disease," they say, "but the patient cannot carry on the open-air treatment in factories and workshops and offices, consequently he breaks down again, and becomes a burden to the State." You almost blame the poor wretch for breaking down! This is your objection to sanatoriums! This is your argument. Further, I have heard it advanced that the poor man's wife and children will be unprovided for during his stay in the sanatorium, and, of course, if he cannot work when he comes out, or breaks down later, they are unprovided for still. I maintain that such an argument is illogical and untenable. Let us suppose that a patient leaving a public sanatorium, where he has been kept for several months at the expense of the ratepayers, is unfit for work, or breaks down, and so continues to be an expense. What of it? Sanatorium treatment for consumption is the best and only treatment known, but even it, in some cases, cannot give a man new lungs. It saves his life, but it may be that he is left a cripple. If so, is it any worse than the surgeon's knife or the lunatic asylum? A man has an accident and loses a leg or an arm. He is a cripple. A man is discharged from an asylum "improved." He is a mental cripple—and there are very few

discharged from asylums cured. What do we do with these people? Do we turn and mock at the surgeon for saving his patient's life because that patient is left a cripple? Do we blame the asylums because those whom they discharge have not their full quota of brains? Hardly! But yet sanatoriums are condemned because, though a human life is saved, sometimes a cripple is left! Let us see where such an argument would lead us. It would lead us back to the paganism of ancient Greece and to the monomaniacs of Sparta, who thought that physical culture was the highest attainment of the human race. Such an argument would lead us to the logical necessity of chloroforming our cripples and shooting our criminals. What is a man's wife and a man's children to do while he is in jail? Would it not be better to hang every evil-doer outright, so that his widow might look round her at once and provide a healthy, non-tuberculous Spartan bread-winner for herself and her children? The consumptive who is not able to work is as much a cripple as the lunatic, the blind beggar, or the operation patient who has left a limb behind him on the operation table, and ought to be, at least, as well treated, no matter what the expense. If you have no sanatoriums he will die. If he dies, you, who object to sanatoriums, have killed him. Why not, then, kill all the other cripples as well and save the expense? That is the logical conclusion of such argument.

THE FEAR OF THE DISEASE BEING INCURABLE. This is a very sad fear. It is a fear that is prevalent in Ireland, especially in country parts, where it is almost a superstition. Even in the twentieth century—even in these days of laboratory triumphs, these days of opsonic indices of tuberculin and sanatoriums—the belief still exists in the breasts of many that tuberculosis is invariably a fatal disease. I have a patient under my care at present who told me the other day that his friends—"oh! save us from our friends"—when they heard of his intending departure for a sanatorium, consoled him with the reflection that such a course was perfectly use-

less. If that patient continues to improve at the rate he has improved up to the present he will be able to knock his friends down when he returns home. For consumption is curable—in the early stages completely and absolutely curable. Later, it can be arrested, and later still, its horrors can be mitigated, and its symptoms relieved. Twenty-five centuries ago Hippocrates wrote that tuberculosis was a curable affection provided it was treated at a sufficiently early stage. Many of the ancient authors—such as Celsus, Pliny, and Galen—expressed similar opinions, and insisted on the importance of good living. In the year 1747 a British physician asserted for the first time that hygiene and diet are the most important factors in the treatment, and that climate and medicines, though valuable, are of secondary consequence.

Carswell, in 1836, recorded many proofs of the curability of tuberculosis from the fact that, after death from other causes, he frequently found upon *post-mortem* examination lungs which had completely healed. In 1840 Dr. George Bodington, of Warwickshire, opened a sanatorium. He was stigmatised as a lunatic, and, by the irony of fate, his sanatorium was converted into an asylum for the insane. In 1855 Dr. Henry McCormac, of Belfast—father of the late Sir William McCormac—advocated similar principles, and met with similar contempt.

In 1859 Herman Brehmer, the well-known German physician, founded his great sanatorium. But even Brehmer did not succeed at once. For a considerable time neither the profession nor the public would listen to him; but at length his results became known, and his results were incontestable. Dettweiler followed at Falkenstein upon somewhat the same lines, and was succeeded by Dr. Otto Walther, of Nordrach. So at length the statement of Hippocrates, twenty-five centuries ago, is proven. Pulmonary tuberculosis is a curable disease, and sanatorium treatment is, so far, the only known remedy for it.



I dislike personalities, especially in public, but I think in the present instance perhaps you will excuse me if I introduce them. Some years ago I was forced to relinquish my work because of ill-health. I had two hæmorrhages. My cough was practically incessant. I could not walk one hundred yards without assistance. I lost nearly two stones in weight in a few months. There were tubercle bacilli in my sputum. The right lung was badly involved and the apex of my left was implicated. I had a regular evening temperature of  $102^{\circ}$ . Upon the advice of a very eminent Dublin physician I went to a sanatorium in Ireland. When, after ten months' open-air treatment, I left that sanatorium my weight had risen from 9st. 5lbs. to 11st. 3lbs. I had no cough, no hæmorrhage, no temperature, and I was walking easily and without fatigue nine or ten miles a day.

That is what led me to take up the sanatorium treatment of consumption; that is what led me to believe in it; that is what induced me to found a sanatorium of my own. And I am not sorry that I have been through it, because now I can take my patients with me and lead them step by step over the path I have trod. "While there is life there is hope!" Perhaps in no disease more than in pulmonary consumption is this saying so fully exemplified, so much so that many writers declare—and I fully agree with them—that even with the worse cases the patient should be submitted to open-air treatment, and the effect observed. A patient with long-standing and advanced disease is often seen to take a new lease of life, proving the truth of that historic utterance of the late Dr. Wilson Fox—"I know of no last stage in consumption."

SIR HENRY GRATTAN BELLEW, Bart.: I rise to propose a vote of thanks to Dr. Hare for his most interesting lecture. I am afraid I am not an eloquent speaker, but this is a question in which I cannot help taking a very deep interest, as I happen to be a member of a local Board of Guardians in the West of Ireland, and



one of my duties, like all guardians, is to look after the health of the district. On this point of the treatment of consumption in sanatoriums I think there is more ignorance and more prejudice than almost on any other. We all know the great trouble there is in overcoming this prejudice. A girl has been taught certain things by her mother, and believes them, and when she becomes a wife and a mother, if her husband or children fall ill, her very love and affection for them induces her to put into practice what she has been told is right, and what generally is wrong. Before we can hope to make any headway in the matter it is absolutely necessary all over the country to break down some of the most cherished beliefs of the women of the country. Anyone who, like the lecturer to-day, gives us arguments to combat and to break down these ill-founded beliefs is doing enormous service to the whole community of Ireland.

REV. DR. LINDLEY CRAWFORD said : I have pleasure in seconding the vote of thanks to the lecturer. Her Excellency has the happiness of uniting all parties in her efforts in the direction I have noted. The wildest Nationalist has no desire to see our country maintain its awful pre-eminence in the matter of this disease; the most hardened Conservative will have no desire to maintain the *status quo*. Sometimes I think we are at one in rejoicing at the effort that is being made to stamp out this terrible scourge, which is such an affliction in our country. I am very glad to have heard Dr. Hare's lecture. I could not but admire the calm, terse way in which Dr. Hare disposed of his opponents. It is not a bad thing for the medical profession, and certainly it is not unusual to be subjected to wholesome criticism. The public has not yet come to believe in the infallibility of the profession, and a certain scepticism exists which is discreditable to meet with; but it will have this effect—that it will ensure that every objection would be met, and would be put down, and that the public would have its

doubts scattered, and would be assured that everything that could possibly be done is being done for the victims of phthisis in these great sanatoriums. I look forward to the time when sanatoriums will be no longer needed, and I imaginē that Dr. Hare will rejoice in the prospect that the day will come in our country when the preventative measures, which I think this Exhibition in connection with tuberculosis is calculated to induce, will stamp out this disease, and when sanatoriums will be no more necessary than special hospitals for the treatment of typhus fever. I beg to second, with the greatest cordiality, the vote of thanks which has been moved to Dr. Hare for his Address.

DR. HILLIS (Rathmines): I beg, your Excellency, to say a few words in support of the vote of thanks. The lecture has been intensely interesting. It is entitled "Answers to Popular Objections to Sanatoriums." As a member of a local public body, I find a particular objection is the question of expense. I hope the result of this lecture will be to educate the ratepayers into seeing the absolute necessity that something should be done in the matter, and that the expense must not stand in the way. We must get rid of that wretched carping about a penny in the £. The sanatorium for the rich is an accepted fact. As far as the City of Dublin is concerned the labouring classes are excellently provided for by Dr. Dunne, who is doing splendid work in the South Dublin Union as regards the curing of consumption. He has shown what can be done there at little expense; but then there is the class—the respectable poor. They are in a different position. Last week a young girl, employed in a business establishment in the city, got an order for an excellent institution which is all too small for the demands that are made upon it. She applied for admission, but was informed that her case was an unsuitable one. You cannot expect that girl to go into the poorhouse, and, therefore, nothing remains for her but to go home and die. I say that is a blot on our civili-

sation. And the one hope I have is that these lectures and demonstrations will so form public opinion that such cases cannot occur in future, and that the public bodies in Ireland will join together and see that sanatoriums and institutions are provided, so that cases such as I have instanced shall be provided for.

The resolution was passed unanimously.



# THE SERUM TREATMENT OF TUBERCULOSIS

BY J. S. MACARDLE, ESQ., F.R.C.S.; Surgeon to  
St. Vincent's Hospital.

SIR HENRY SWANZY, President of the Royal College of  
Surgeons, in the Chair.

IN view of the enormously larger number of cases of internal, or so-called "medical," tuberculosis that have been subjected to one or other method of serum treatment, it will be necessary for me, in discussing the subject, not to confine my remarks exclusively to the surgical forms, but to include the effects that have been observed on every variety of tubercular disease.

Ever since the discovery of the tubercle bacillus by Koch in 1882, efforts have been made to utilise our possession of the bacillus itself and its metabolic products in order to produce *immunity*. The brilliant success that, towards the end of the Eighties, attended the efforts of Behring in Germany and of Roux in France to confer immunity against the poisonous products of the bacilli of diphtheria and of tetanus tended to excite the hope that something similar might be achieved in the case of tuberculosis.

Naturally, these hopes were raised to the point of enthusiasm when, in 1891, Koch announced that he had discovered a substance which could not only confer on experimental animals immunity against subsequent inoculation of the disease, but could actually stay the course of the already developed malady. Physicians and surgeons hurried to Berlin from all parts of the world. A struggle, sometimes bordering on the un-

seemly, took place for seats at the clinics where the new curative substance was being tried, and distinguished professors returned home satisfied if they could only secure a few drops of the precious "lymph," as the curative substance was called. The wave of enthusiasm did not last very long. The drug—the composition of which I shall detail directly—was given in doses which we should now regard as enormously too high. More than one eminent teacher of pathological anatomy—the celebrated Virchow among the number—raised his voice against the use of the "lymph," alleging that it tended to produce so great an amount of flow of blood to the parts already affected that the bacilli that may have been lying there in a quiescent or encapsulated state were mechanically dislodged and scattered over the system, thus submitting an acute and generalised form of the disease for a chronic and localised condition. We now know that this unfortunate result, if it ever really occurred, was due rather to the injudicious mode of employment than to the lymph itself. At the time, however, the disappointment was so keenly felt that the balance of medical opinion swayed too strongly to the other side. The lymph ceased to be used, save in a relatively small number of cases, chiefly of the external form of the disease, such as lupus. Even now, after the researches of Wright and his fellow-workers have placed in our hands a new weapon, whereby we can estimate the effect of injections in increasing or diminishing the anti-bacterial or so-called opsonising power of the body fluids, it must be admitted that the method of treating tuberculosis by injections of one form or another of Koch's tuberculin does not obtain in our local hospitals—and this applies to the whole United Kingdom—that extended application which it seems to merit.

I will now explain the composition of Koch's original curative substance, or "Old Tuberculin," as it is now called, in view of the fact that it has undergone several modifications.

He caused the tubercle bacillus to grow in pure cultivation on nutrient broth containing a little glycerine. When the cultures were four to six weeks old he filtered them through porcelain, so as to remove the bacilli, and thus obtained a clear fluid which he concentrated by boiling to one-tenth of its original bulk. This is Koch's old tuberculin, round which so violent a contest raged in the early Nineties. It must contain such substances as are—

(a) Produced in the nutrient fluid by the metabolic activity of the bacillus, and

(b) No doubt also the contents of the bodies of such bacilli as have died during the period of culture and undergone disintegration and solution in the culture fluid.

But of course it can only contain what we now call thermo-stable substances, viz.:—those capable of resisting heat.

Denys, of Louvain, about the year 1903 or 1904, modified the preparation in so far as he omitted the process of concentration by boiling. This enabled him to preserve a number of useful constituents which are destroyed by heat, and, as a matter of fact, Denys has had a number of most successful results. He found that dogs to which he had administered the liquid in increasing doses were able to stand an injection of living tubercle bacilli which was fatal to animals not so prepared. Encouraged by a number of such favourable results, obtained on experimental animals, Professor Denys proceeded to apply his tuberculin to the treatment of the disease in the human subject, and published his results relating his experience of some two thousand cases in a book which he laid before the Paris Tuberculosis Congress of 1905. Generally speaking, those results seem to have been highly encouraging.

To me it would appear that Denys' success is due not so much to the modification in the preparation of the curative substance as to the extraordinary stress he lays upon the avoidance of all reactions. He regards a rise



of temperature as a thing to be feared, and as actually prejudicial to the patient whose condition, both subjective and objective, should be carefully watched, and the dose diminished on the smallest evidence of reaction.

It would appear that, applied in this way, tuberculin is capable of inducing immunity, not only against the soluble extra-cellular poison or exo-toxin of the tubercle bacillus, but also against its insoluble intracellular substances or endo-toxins. This it does—

(a) By evoking the formation of substances specifically opposed to the tubercular poison. These substances, or anti-bodies, protect the healthy tissues by combining with or neutralising any tubercular poison that may be liberated in the blood.

(b) By enlisting the white corpuscles in the struggle against the invading bacillus. These little white cells, found in millions in our blood, may be said to act as a sort of garrison, and defend our bodies against such noxious foes as the bacillus. The effect on them of the tuberculin may be said in popular language to be that it renders them more keenly alive to the presence of the intruder, more prone to hurry to the scene of conflict—that is, to the spot where the bacilli are—and to seize upon and devour them. The injection of tuberculin has, moreover, been proved to evoke the production of substance that acts upon the bacilli in such a way as to render them palatable to the white blood corpuscles, so that the bacilli are more readily and more plentifully devoured. The great merit of our distinguished fellow-countryman, Sir Almroth Wright, is to have recognised the importance of the production of these substances for which he suggested the name Opsonins, from a Greek word signifying to prepare as food. Wright has, moreover, invented an ingenious, if somewhat troublesome, method of determining the amount of these substances present in the patient's serum, and has pointed out that, generally speaking, the production of such bacteriotropic substances, as they are called, can be increased by the injection of the dead bodies of disease-producing

bacilli—in other words, of vaccines. To this aspect of the treatment I shall return later on.

So far as I am aware, the most extensive trial in this country has been given to Denys' tuberculin by Dr. Frank Dunne, who expresses himself as well satisfied with the results he has obtained.

A Swiss doctor, named Schnoller, gives a tabulated statement of two hundred and eleven cases which he treated according to Denys' method. In the first stage he reports 100 per cent of successes, in the second stage 94.2, and in the third 72.3 of his patients did well. Should more extended experience prove that so large a percentage of favourable results does not rest on mere optimism we may look forward in the near future to a great development in the use of this curative agent introduced by Professor Denys. Its application is rendered all the easier by the fact that the dilutions are sent out ready for use, whereas Koch's preparation has to be diluted by a practised hand by the aid of graduated instruments not always available.

Passing over the preparation introduced by Klebs, and called by him Tuberculocidin, and Landmann's Tuberculol as not having obtained sufficient general recognition to entitle them to discussion in a popular discourse, I will pass on to Beraneck's Tuberculin, a preparation which was submitted by its inventor to the late Paris Congress, and the claims for which gave rise to animated discussion. Beraneck employs phosphoric acid for the extraction of toxic matters out of the protoplasm of the tubercle bacillus, and claims to obtain the maximum of useful substances in his fluid. I am not aware that this form of Tuberculin has received any extended lead over here, but Professor Sahli, who has used it on many hundreds of patients in Berne, reports on it most favourably. Like Denys, Beraneck aims at gradually immunising his patient without producing any febrile reaction, increase of pulse-rate, or other unusual manifestation. This gradual process takes a long time, and doctor and patient must be prepared to

see the treatment going on for years. When the highest dose that can be borne is reached the immunity is kept up by injections at intervals of eight to fourteen days. All of his early cases Sahli claims to have cured in this way, and in the others—the more advanced ones—he considers that the progress of the disease has been stayed, or its advance materially delayed, as the result of the treatment.

Another plan that has been struck out is to use Tuberculin prepared from cultures of bovine tubercle bacilli. It would appear that the bacillus that has become acclimatised to the organism of the bovine animal loses part of its virulence very much as the hitherto unseen virus of small-pox becomes modified by passage through the calf. Spengler even went so far as to inject under his own skin  $\frac{1}{120}$  part of a grain of a living culture of bovine tubercle bacilli, equivalent to several millions of individual organisms, and recovered. Tuberculin made from bovine bacilli may, therefore, be expected to exercise a milder action than that produced by extracts of human culture. This has been actually shown to be the case. Indeed, as Nathan Raw has pointed out, it would seem that human and bovine bacilli exercise a mutually immunising influence over each other, so that injections of material derived from bovine bacilli may be expected to exercise a curative influence on the lesions produced by the human bacillus, and *vice versa*. If this be so, then it would seem that the kind of tuberculin that ought to be used for treating the form of tuberculosis due to bovine bacilli is that prepared from human bacilli, and conversely. Now, Raw holds that tuberculosis of skin, bones, joints, and glands, as well as primary abdominal tuberculosis, is of bovine origin. These forms should, therefore, be treated with tuberculin of human origin. Conversely, pulmonary phthisis being due to human bacilli is most suitably treated by tuberculin obtained from bovine bacilli. In the light of the valuable report by Dr. L. Cobbett, issued the other day, and describing the results of his experimental work

on viruses of human origin carried out for the Royal Commission on Tuberculosis these views as to the generally bovine origin of surgical tuberculosis may need modification. Thus, for example, out of ten cases of joint tuberculosis examined by Dr. Cobbett, nine yielded cultures of the milder grade of virulence when tested on the ox and rabbit, and, therefore, probably of human origin. However this may be, the fact remains that remarkably favourable results have been obtained with bovine tuberculin by Bandelier, of the great German sanatorium at Kottbus. He reports having treated one hundred and seventy-eight cases altogether, of whom thirty-two were in the first stage. Of these just 94 per cent. recovered. In the second stage there were one hundred and seven patients, of whom 21 per cent. were cured, and 78 per cent. recovered their working power. In the third stage were twenty-five patients, not one of whom was cured; 31 per cent., however, recovered their full working power, whilst 55 per cent. recovered sufficiently to earn at least one-third of their ordinary wages.

Dr. Bandelier draws special attention to a case of extensive ulcerated lupus of the face, combined with a pulmonary tuberculosis in the second stage, which was completely cured by injections of bovine tuberculin. It is interesting to note that he measures the amount of immunising substances produced in the blood as the result of the injection, not by the opsonic effect, but by the agglutinating influence exercised by the serum on emulsions of tubercle bacilli.

I now come to Koch's new tuberculin, in which he makes the attempt to utilise not only the soluble poisons produced by the bacillus, but also the bacillary bodies themselves, so as to produce not only an anti-toxic immunity (as is done in the case of diphtheria and tetanus), but also an anti-bacterial immunity (as is done in typhoid and cholera). With this object in view, he ground up the dried bacilli into a fine powder, and extracted them with normal saline solution. He allows the broken-up bacilli to sediment, and adds enough

glycerine to make the fluid keep. This is the present form of Koch's new tuberculin, or, as it ought to be called, bacillary emulsion. It is a true vaccine in Wright's sense of the word. This preparation has a more powerfully immunising influence, and Koch claims to have succeeded by its use in completely protecting the guinea-pig—the most susceptible of all animals—against injections of virulent bacilli. It is with this preparation that the excellent results recorded by Wright himself, by Bulloch of the London Hospital, by Professor White and Dr. Coleman here in Dublin, and by many others, have been obtained—the difference between British and German practice being that under Wright's influence British physicians work under the control of the opsonic index, whilst in Germany the agglutinating power of the serum is estimated. To Wright, moreover, belongs the credit of pointing out the existence of a "negative phase" after each injection, during which the anti-bacterial substances are diminished below the normal, and which may become dangerously intensified and prolonged by repetition of the injections at too frequent intervals. Careful observation of the opsonic index is the best way of avoiding this untoward result; but, as I have already observed, this procedure is troublesome and time-consuming, and if insisted on would place an almost insuperable barrier on the general application of the method to hospital patients.

From what I can gather from the reports of the superintendents of German sanatoria the results obtained in pulmonary cases with this new tuberculin show a great advance on those obtained *without* the injections.

Thus, Dr. Moeller, of the Belzig Sanatorium, in treating seven hundred and seventy-two cases without tuberculin, obtained 11 per cent. of cures, whilst out of one hundred and ninety-three treated with tuberculin there were 30 per cent. of complete recoveries. Dr. Bandelier, of Kottbus, whom I have already quoted, treated two hundred and five cases by this method. Twenty-seven of them were in the first stage. Of these 37 per cent.



were cured, 44 per cent. recovered full working powers, and 18 per cent. regained working power in the sense of the German Insurance Law.

One hundred and twenty-four patients were in the second stage. Ten per cent. of these were cured, 62 per cent. recovered full working powers, and 24 per cent. recovered it partially.

In the third stage were fifty-four patients, none of whom were cured; 16 per cent. were restored to full working power, and 64 per cent. were able to comply with the requirements of the law as regards working power.

Over half of the total number who had bacilli in their sputum on admission were free from them on discharge. These results are certainly most encouraging, and it is to be hoped that this mode of tuberculin treatment will meet with extensive employment in our Irish popular sanatorium when they are *fait accompli*, which we all hope will soon be the case.

The latest forms of tuberculin are those introduced by von Behring under the names of Tuberculase and Tulase. He proposes that the latter should be given in milk to young babies, as a mode of preventive treatment. The mode of preparation is so complicated, and the reports of results are so few, that I may be excused from entering on a discussion of these substances. Von Behring can only be said to have excited hopes which reached their culminating point at the Paris Congress of 1905, and have since been doomed to disappointment.

I have left myself but little time in which to deal with the attempts that have been made to utilise the method of *passive immunity* in the treatment of tuberculosis. This depends on the removal of protective substances from the body of the animal that produces them and their introduction into the body of the patient. The serum of an actively immunised animal is used for this purpose. The most important product of this class is that introduced by Maragliano and pushed forward by that investigator with tireless persistency. He injects into horses, cows, and calves the poison of the

bacilli as well as the bacilli themselves. After six months of this treatment he finds that the serum of the animals so treated exercises a protective influence on animals that are inoculated with living, virulent bacilli. He uses this serum for the treatment of human patients, and even goes a step further by employing the milk of these highly immunised animals for administration. I cannot delay now to discuss the results which Maragliano and his school claim to have obtained on thousands of patients. Suffice it to say that, outside of his immediate sphere of influence, they seem to have failed to convince the minds of those best qualified to judge of such matters.

Another serum of which much the same can be said is that of Marmorek, who claims for it especially good results in surgical cases. The time is not ripe for a definite pronouncement as to the real permanency and value of the results claimed by this author and his adherents.

Summing up the whole of the facts which I have endeavoured to lay before you this evening, I would say that the best prospect of the successful application of immunising methods lies in the extended use of Koch's new tuberculin or bacillary emulsion, when possible, under the control of the opsonic index or of the determination of the agglutinating power of the patient's serum; but when this is not possible, then the treatment, nevertheless pursued, with small doses and at such intervals as mature experience has shown to be probably safe. When at the same time it is possible to make use of the hygieno-dietetic treatment as carried out in sanatoria we may hope to rescue even advanced cases of tuberculosis, both pulmonary and surgical, from the grip of that fell disease—tuberculosis.

PROF. E. J. McWEENEY, in proposing a vote of thanks, said: I have very great pleasure in moving a hearty vote of thanks to Mr. MacArdle for the very able and instructive lecture which you have just heard from him. With



regard to Mr. MacArdle's reference to Koch's original tuberculin, I myself got a most favourable impression from several cases which I treated with it at the time. I am not much occupied, as most of you know, with the curative aspect of medicine. But at that time, having been present at Berlin during the time that Dr. Koch was bringing forward this treatment, and having listened to his discourses and seen his methods, I applied his treatment in a few cases here in Dublin with results that I regarded as most satisfactory at the time. There is one case in particular—the case of a laboratory assistant of my own whom I treated with Koch's tuberculin after the tubercle bacillus had been found in his sputum. I procured his admission to the Newcastle Sanatorium; and in addition to this he was given graduated doses of Koch's tuberculin. The result has been eminently satisfactory. Five years after the appearance of the first symptoms and the appearance of the bacilli in his sputum, that young man is alive and well, and able to perform all his ordinary avocations. I regard that as a most satisfactory result. And with the experience of Continental observers supplementing my own, I think that the blame—if blame there be—attaching to the application of Koch's original lymph is to be laid not to the door of the lymph itself—which I still persist in regarding as a most excellent curative agent—but to the doses in which it was applied. It was applied in doses which we now know, from the researches of many observers and, not least of all, the researches of our own distinguished fellow-countryman, Sir Almroth Wright, have been enormously too large. Now that Sir Almroth Wright has placed in our hands a complicated and troublesome means no doubt, but yet a means whereby we can study the condition of each patient after each injection, I hold there is no excuse for not applying one form or another of the tuberculin. And whether it be Koch's original tuberculin, whether it be Denys' modification of it, or whether it be Koch's new tuberculin, whichever one is employed, I think we may

confidently expect to get good results. The effect of the introduction of vaccine into the human system is this—and by vaccine I mean the actual dead bodies of the microbes which produce the disease—by injecting these bodies in suitable doses into the system a reaction is evoked in the system itself. This reaction exercises itself upon the living germs that are present in the body, and produces their death or diminishes their vitality. Wright has pointed out that immediately after the injection of each dose of the dead microbes the protective powers of the body go back for a while. If now you proceed to inject further doses of the vaccine you still further depress the resisting powers of the patient, and the consequence is that injury may result, and that the disease may not be improved. But with the controlling methods introduced by Wright, testing the effect of each injection, and, before you give another, waiting until the protective forces of the body have gone up as a result of the injection, you will produce a gradually rising scale of immunity in the person operated upon, and thus bring about a cure of the disease. From my reading and experience upon this important matter I have not got the slightest doubt in my mind that tuberculin, in one shape or another, is the only product which has ever proved to be of any real use in the specific treatment of tuberculosis. The various side-manifestations of tuberculosis, the various secondary results which it brings about, can be, and are, successfully treated by other remedies. But taking the actual tubercular infection by itself, and without reference to anything else, the only product that promises successful results is tuberculin. And I look forward with confidence and hope to the day when tuberculin will be an integral part of the course of treatment to which all poor patients will be subjected in these working-class sanatoria which we must certainly hope will soon be founded throughout the whole of Ireland. I have very much pleasure, Mr. President, ladies and gentlemen, in proposing that the thanks of this meeting be cordially offered to Surgeon

MacArdle for his very instructive and able address here this evening.

DR. FRANK J. DUNNE, in seconding the vote of thanks, said: I have very great pleasure in seconding this vote of thanks that has been proposed by Dr. McWeeney to Mr. MacArdle for the address that he has given us. The original Koch tuberculin as used now is not used as a curative agent, but is one of the most valuable products that we have in obscure cases of tuberculosis. It is used in those cases as a diagnostic, and from the reaction that it gives we are able to definitely determine that it is a case of tuberculosis we are dealing with. We frequently meet these cases, and it is very important in the early stage to be able to detect them, so that they can be treated at once. I was a pupil of Dr. Boyd's in 1891, when he commenced, with the rest of the profession in Dublin, treatment with Koch's tuberculin. I was always of the impression that that tuberculin never got a fair trial in Dublin—I need not say in Dublin alone, but pretty well all over England. I will just bring forward one fact that will show you that perhaps it did not get a fair trial, and that is, that during the time that the patients were being treated with it the Hospice for the Dying and the Incurable Hospital were emptied of all their tubercular patients. Now, patients are not taken into the Incurable Hospital or into the Hospice for the Dying unless they are pretty well advanced, yet they all left them and were treated in the general hospitals. The principal reason that influenced me to take up the treatment of tuberculosis with tuberculin is that now, ten years after the death of Dr. Boyd, I know two persons who were treated by him with Koch's original tuberculin who are alive and without any sign whatever of pulmonary consumption. They had the disease. I know myself that the tubercle bacilli were present in quantities, and they are alive at this day—sixteen years after their treatment with Koch's original tuberculin. Dr. McWeeney hit the nail on the head when he said that

the reason why Koch's tuberculin was not successful was because of the large doses in which it was used. Mr. MacArdle has referred to Denys' tuberculin. I myself am a pupil of Dr. Denys. I studied under him in Louvain, and I have used his tuberculin for the last three years. I have used it in pulmonary consumption in probably 200 cases—in lupus with very good results, in all forms of joint and bone tuberculosis with excellent results in a great number of cases. In intestinal and stomachic tuberculosis it has also given good results. Of course the number of cases are much smaller than the pulmonary cases. I injected this very afternoon over 70 cases of all kinds of tuberculosis in the South Dublin Union Hospitals. I cannot agree that the excellent results that have been obtained by the eminent authority quoted by Mr. MacArdle in the first stage of pulmonary consumption—100 per cent.—can be obtained with Denys' tuberculin or any other form of tuberculin. My experience shows that it is not possible. And I have seen a great number of Professor Denys' cases, and he certainly got good results. But I think it is much wiser not to have the idea that you can get results like that. I think that is a mischievous idea. I think it is very much better to accept the statement that a very large proportion of pulmonary consumptives in the first stage are curable. A very large proportion of pulmonary consumptives in the second stage can also be cured. I have seen cases cured in which both lungs were involved. Of course we are not allowed to talk of cures in pulmonary consumption cases. We have to talk of them as economic cures. You cannot call them cures, because it is only when we are dead and gone, after twenty or thirty years, that if these patients show no signs of consumption that they can be called cures. This does not apply to typhoid fever. If a man is able to go out after eight weeks he is called a cure, but it must be years in the case of a consumptive. However, I maintain that if a man has had pulmonary consumption, and if, after treatment with tuberculin, there

is a complete absence of bacilli from his expectoration, and if he is able to do his work, able to go to his work, and able to get on at that work, then I think that whoever has treated him is fully entitled to call him a cure, just as in the case of typhoid fever you would be entitled to call a patient a cure. The reason why there is a restriction in the use of the term is because so many cases relapse; but I think the cases that relapse are the cases that were treated by other methods, and were not treated by tuberculin. Tuberculin is the only hope of cure, I believe, for consumptive patients. Fresh air and good food are absolutely essential to the treatment with the tuberculin, but the tuberculin it is that does the cure and makes the cure permanent. I have seen cases of Professor Denys. I have actually examined them—all classes of men, doctors, medical men, artisans, and railway porters, who have been treated by him five or six years back. Those men are walking about doing their work, and some of them told me that from the time they left Professor Denys they have never lost a day's work. The cases that Dr. Denys has treated ran to about 1,800. I saw at least 20 or 30 who had been treated three, four, and five years ago. I spoke to them, and I examined a considerable number of them, and they are now able to do their work, and a good many of my own cases are able to do their work, and they have been working for two years. I have been three years at this work, and have not lost a day's work during that time. But the essential point is to start the treatment early. I have to lecture later on on the subject of tuberculosis dispensaries, but perhaps I may say a word on the subject now. The object of the tuberculosis dispensary is to get the patients early, and to get them treated early. If a man comes in the second or third stage of the disease, with large cavities in his lungs—well, you cannot fill a cavity—but if you get a man in the dispensary when he is just beginning to cough, or when there is very little the matter with his chest, and if you are able to treat him, he would have a good chance

of his life, and would be capable of being cured. And this applies still more in the case of children. Nobody in the room, or in the country, has any idea of the extent to which children are subject to tubercular disease; I do not think that the profession have any notion of it. These children of a tubercular father or mother who is being treated in the hospital or sanatorium would be brought to these tubercular dispensaries simply because they had been in touch with tubercular patients. The nurse, or the father or the mother, would bring the children just to see if there was anything wrong, and then they would be taken in the very early stage, and would be treated and cured, instead of growing up practically incapable of earning their own livelihood. I would just like to emphasise the point that it is the dead bodies of the tubercle bacilli which are incapable of giving the disease that are injected with tuberculin. I am very grateful for having been given the opportunity of seconding this vote of thanks to Mr. MacArdle for his address, and of expressing the great pleasure with which I listened to the facts which he brought out.

SIR HENRY SWANZY, in putting the vote of thanks, said: I am sure I shall not have any trouble in inducing you to pass this resolution, because I am convinced that you have all listened to Mr. MacArdle's address with as much pleasure as I have, and that you have learned quite as much or more, because I am expected to know something about it. I am very glad to say that I coincide entirely with the estimate which he and Dr. McWeeney and Dr. Dunne have formed in reference to the serum treatment of tuberculosis. In my own particular branch of surgery I find that the use of the tuberculin does an immensity of good. It is quite possible by it to do a great deal for these unfortunate cases of diseases of the eye, in which the malady is the result of the tubercular bacillus, if one gets them in good time. But the whole trouble is that one gets them very often quite too late. These lectures seem to me to be most admirable, because



if we are going to fight tuberculosis at all in our country it is of the utmost importance that the public should understand the way that we propose to go about it. Perhaps some of the details that are given to the public in these lectures are of a kind that is usually reserved for the medical profession itself. We seldom explain to the public why we do things and how we do them. But in a matter of this kind it becomes absolutely necessary, in order to induce people to submit to treatment which is somewhat novel, that they should really understand what we are about and how the thing is done, and what reason we have for thinking it is a good method. That is the great advantage which I think we may say that these lectures have. And you will allow me to say that I am delighted to see such a splendid gathering here to-night, attracted, no doubt, by the fact that Mr. MacArdle was going to lecture, but also to a great extent because of their interest in the subject itself. And even the inclemency of the weather has not succeeded in keeping them away. It shows, I think, that the public interest is being aroused in this very important matter, and it increases the hope which was expressed by Dr. Osler in his lecture here in Dublin when he said that the great thing was to rouse public interest, and that by arousing it we should be sure of success. I have been delighted to come here to-night, and have listened with the greatest interest to Surgeon MacArdle, and I am sure you will pass the resolution with acclamation.

The vote of thanks was passed with acclamation.



# THE RESPONSIBILITIES OF SANITARY AUTHORITIES WITH REGARD TO TUBERCULOSIS.

BY SURGEON-COL. EDGAR FLINN, D.P.H.,  
F.R.C.S.; Medical Inspector, Local Government  
Board.

H. E. THE COUNTESS OF ABERDEEN in the Chair.

I THINK one can hardly make any excuse for referring in general terms to the question that is so often and so prominently before the public at the present time—that is, the high death-rate from tuberculosis. When one remembers—as has been often stated in this hall during the past three weeks—that over twelve thousand people die annually in Ireland from all forms of tuberculosis, and that out of that number nearly ten thousand die annually from phthisis or pulmonary consumption, one feels that we cannot too frequently draw attention to these alarming figures. The death-rate for Ireland, as has also often been repeated, is 2.7 per 1,000, while the death-rate from tuberculous disease for England is less than one-half of it—viz., 1.2 per 1,000. And the most regrettable fact in all this is that the highest mortality rate from this disease in Ireland ranges between the ages of twenty and thirty-five years of age. In fact, it is absolutely the “flower of the flock” of our country that seem to succumb to tuberculous disease.

The subject of the brief paper that I have the honour

to bring before this audience to-night is, as you are aware, "The Responsibility of Sanitary Authorities with regard to Tuberculosis."

The responsibilities of local authorities in regard to tuberculosis have of recent years undergone considerable changes—these responsibilities have increased since it has been so clearly established that the disease is a preventable one and capable of being communicated from diseased persons to healthy persons.

The general public have a lively dread of small-pox, diphtheria, scarlatina, and active preventive measures are always instituted against the spread of these diseases. The occurrence of a case of small-pox creates great alarm, and, quite properly, public money is freely devoted to cope with the outbreak and prevent its spread.

Let us hope that the time is near at hand when similar active measures (under certain conditions) will be carried out to prevent the spread of pulmonary consumption.

Pulmonary consumption will never be successfully grappled with until the houses of the labouring classes are in a cleanly and sanitary condition. The fact that insanitary surroundings favour the disease and that sanitary and healthful surroundings prevent it must be preached from the house-top in season and out of season, day in and day out. It has already been stated here frequently, but it cannot be repeated too often, that cleanliness, sunlight, and air are the deadly enemies of consumption, and that filth, overcrowding, and want of fresh air are its best friends. Prevention of the disease is the first and easiest step, and in this matter the people can play the strongest and better part. They can do a great deal to fight the disease, and this at practically no cost.

One hopeful sign of the times is the gradual disappearance of many of the thatched, ill-ventilated hovels in the rural districts, which ever have been the hot-beds of pulmonary consumption, and the substitution therefor of comfortable labourers' cottages.

The Labourers Dwellings Act, passed in the last

Session of Parliament, is, I am glad to say, being largely availed of in the rural districts. The first day of February, 1907, was fixed by the regulations as the last day for making representations to be dealt with under initial schemes, and by that date no fewer than 57,906 applications had been made for cottage plots, additional allotments, and tracts of land, the exact number of the applications for new cottages alone being 46,856, being distributed as follows:—Ulster, 10,325; Munster, 16,048; Leinster, 13,251; Connaught, 7,232. Total, 46,856 cottages.

The result of this useful Act will be to vastly improve the condition under which the rural labouring classes will live in future. A certain responsibility will rest with those charged with the active local administration of the Act to insure that the new cottage homes will be erected in strict conformity with sanitary principles, and that good value will be given for the large sums to be expended.

What can sanitary authorities do to prevent the spread of tuberculosis? This is a question that naturally arises. They can do much—aye, very much—to arrest its progress. The Local Government Board in 1901, and again in 1903, issued a circular letter, addressed to all local authorities, drawing attention to the high death-rate then existing from pulmonary tuberculosis; and again, in a circular letter addressed to the Urban and Rural District Councils throughout Ireland, in June, 1906, the Local Government Board drew attention to the high death-rate from the disease, and made the following important recommendations:—

1. That each Council should freely distribute and circulate leaflets and posters (similar to those forwarded) throughout their district. These leaflets and posters described the precautionary measures that should be taken to prevent the spread of the disease.

2. The Councils were also asked to give special attention to the imperfect housing conditions of the people, and to pursue a vigorous administration of the Public

Health Acts in regard to the abatement of all nuisances prejudicial to health.

3. Suggestions were also made that when consumptive patients were in the incipient state, and when the disease was capable of being cured or arrested, the patient should be removed to a sanatorium or other place specially provided for the reception and treatment of those affected with the malady. I am glad to be able to state in this connection that several conferences have been already held between various sanitary authorities to consider what steps should be taken to deal with the tuberculosis problem.

Under section 155 of the Public Health (Ireland) Act, 1878, a sanitary authority may, with the consent of the Local Government Board, provide hospitals for the use of the inhabitants of its district, or may enter into an agreement with the management of any existing hospital for the reception of the sick inhabitants of the district on payment of such annual or other sum as may be agreed upon. Further, any two or more sanitary authorities may, under section 12 of the same Act, be constituted a Joint Hospital Board, and this course has already been adopted in the County of Cork as well as in the City and a portion of the County of Dublin with a view to the establishment of sanatoria for the use of the inhabitants of the several Urban and Rural Districts comprised therein. It being of the very greatest importance that pulmonary tuberculosis should be recognised in its earliest stage, it was further pointed out that in some cases a correct diagnosis could only be arrived at by submitting the "*sputum*," or spittle, of a suspected case to a bacteriologist for his examination, and the Councils were recommended to instruct their medical officers of health to adopt this course in such cases.

4. The Board further suggested that the appointment of local committees by the sanitary authorities would be very beneficial, and that this object would be best obtained by appointing a few members of each Council in conjunction with some local clergymen, medical prac-



titioners, and others likely to take an active interest in the question. The functions of such a committee would be of an educative nature, and would do much good both in conveying information to sufferers and circulating literature relating to the disease, and may I point out that it is here that the functions of the Women's National Health Association are so clearly indicated. It is principally in this connection that this association will have ample scope to play its beneficent part in the war against tuberculosis throughout the Urban and Rural Districts of Ireland. The assistance which this association will be able to afford should prove of untold benefit, and it is earnestly to be hoped that its branches will find a home in every important and popular centre in Ireland, and every effort should be made to spread the light as to its high and worthy aims and objects. All that is required is the enrolment of a few enthusiastic recruits in each district to help in the good work.

It will be seen that if all the suggestions conveyed to the sanitary authorities in the various circular letters and leaflets of the Local Government Board are carefully considered very much can be done by them to carry on a successful campaign against tuberculosis.

Here I may also note that five Medical Inspectors have been literally tramping the country, conferring with sanitary authorities and urging them to action.

It is gratifying to note that the all-important question of the housing of the labouring classes in the country districts is engaging the attention of the District Councils. The money being expended on the better housing of the labourer must ultimately have good results, as it is mostly from this class that the victims of pulmonary tuberculosis come, and the better the labourer is housed the less will be the rate of mortality from consumption.

The conditions, as we now know, affecting the prevalence of tuberculosis are those that predispose to all infectious diseases. Overcrowding, lack of ventilation, earthen floors, accumulations of organic and vegetable

filth near dwellings are some of the many causes that help to lay the seed of pulmonary tuberculosis. Once the disease obtains an entrance into the poor man's cottage in the country it is sure to claim more than one victim, as it is impossible to carry out isolation or other preventive measures.

Again, the continuous breathing of a damp, sodden, and vitiated air has much to do with the promotion and development of this disease. In it we have throughout the country the outcome of overcrowding, the defective drainage of the foundation of houses, absence of spouting, damp walls, &c. All these matters come within the scope of the power of sanitary authorities, and vigorous and sustained attention to them means the prevention of disease and the preservation of life in the Urban and Rural Districts. By every order that a sanitary authority gives for the improvement of the drainage and ventilation of domestic premises and the prevention of overcrowding they are aiding in the prevention of a disease lingering and disabling in its nature, and one that tends to bring poverty in its train, and leaves its victim not infrequently a charge on the public rates. If those charged with the active administration of the Public Health Acts would recognise this fact much would be done to limit the spread of pulmonary consumption.

It has hitherto been difficult to convince the public mind that pulmonary tuberculosis is a disease of a highly infectious character, or that preventive measures were necessary to prevent the disease spreading to the members of a family once it had invaded a household.

It has been suggested that in the interests of the public health pulmonary tuberculosis should be added to the list of diseases notifiable under the Infectious Diseases (Notification) Act, and application has been made to the Local Government Board in this connection to schedule it as such; but the Board has expressed the opinion that compulsory notification of consumption should be carried out by special legislation, and that safeguards should be provided to ensure that no unnecessary taint is placed on the liberty of consumptive patients.

It has also been pointed out that if notification is used merely for the purpose of gaining information as to the locality of the disease and helping the sufferer by giving assistance and advice which would be useful in protecting other members of his family from contracting the disease, they consider that it would, under efficient and sympathetic administration, be a most useful public health measure.

The Infectious Diseases (Notification) Act in Ireland is not compulsory, so that in a large number of districts the sanitary authorities have not taken advantage of the provisions of the Act and have not adopted it. This is much to be regretted, and from a health point of view is not satisfactory. The provisions of this Act have only been adopted in one hundred and twenty-nine Rural and eighty-one Urban Districts. In England the provisions of this Act are compulsory. Another most useful Act—the Infectious Diseases (Prevention) Act—has only been adopted in ninety-eight Rural Districts and sixty-four Urban Districts. This Act contains some very useful clauses, section 4 of the Act giving power of inspection of dairies in certain cases, and power to prohibit the supply of milk.

The death-rate from pulmonary tuberculosis in Dublin still remains, I regret to say, at a high standard, and exceeds that of all other cities and towns in the United Kingdom, and it points to the fact that if the death-rate in Dublin is to reach a normal standard energetic and sustained measures of prevention must be adopted to cope with the continued prevalence of tuberculous disease in the city. In some of the poorer districts pulmonary tuberculosis appears to have obtained a foothold which will require vigorous and sustained efforts to dislodge. A death-rate of 4.3 per 1,000 from all tuberculous diseases is not pleasant reading.

The tenement house system which prevails so generally in Dublin is responsible for largely aiding in the condition associated with a high rate of mortality.

In Dublin, according to the Census of 1901, out of the

total number of 59,263 families, there are no less than 21,747 families—36.70 per cent.—occupying one-room tenements.

In some of the tenement houses that I have visited as many as ten families are inhabiting them, and in many of the larger houses the number of families is even greater.

The atmosphere in the ordinary tenement room is always close and vitiated. There is but little means of ventilation, and in the winter months both windows and doors are kept closed. These rooms, being used for living and sleeping purposes, become most unhealthy, and the vitality of those residing in them is naturally lowered.

The rearing of young children under such conditions predisposes them to contract disease and to grow up delicate—the seed being frequently laid of pulmonary tuberculosis.

Nothing shows the exceptional poverty that exists in Dublin more than the fact that such large numbers of the population are, by their circumstances, compelled to live in single rooms, and to thus bring up and rear their families under unhealthy and undesirable conditions.

I am fully sensible of the difficulties that surround the tenement room question in Dublin, and I am also aware that considerable improvements have been effected in several quarters of the city. The tenement house question is one of ever-pressing urgency, and though much has been done in recent years to provide healthy dwellings for the working classes, yet much, aye, very much, requires still to be achieved in this direction. Many patients in the various stages of pulmonary tuberculosis or consumption occupy the same room with healthy persons, and are thus a source of danger to their own families. The isolation of such cases is imperatively necessary.

Frequently a room in a tenement house that had been occupied by a phthisical patient is rented and inhabited by another family. No disinfection being carried out, the danger to the incoming tenant is of serious moment.

In Dublin in recent years by arrangement the Medical Superintendent Officer of Health is now furnished with a list of the registered deaths from tuberculosis. This enables the Public Health Department to have the room or rooms thoroughly disinfected at once after the death has occurred. This example should be followed when possible in all Urban and Rural Districts. Whenever it is ascertained that a death has taken place from consumption the room where the patient has died should be thoroughly disinfected. On visiting a tenement house recently in Dublin I found the mother of a family suffering from phthisis. She had been in hospital for six weeks, and had recently been discharged. This woman had a family of six children. Four had died within the last three years, as she stated, from "delicacy." The return of this poor woman to this tenement house was regrettable in view of her condition and the history of the family. She, however, had no option. She did not appear to have been instructed in taking the ordinary precautionary measures in her own and her neighbours' interest.

This case, I fear, is but an example of what is occurring very frequently in Dublin and in many other districts, and emphasises the necessity that exists for providing some effective means for the segregation of cases of advanced phthisis. It also shows how useful a system of notification would be. If a case such as this had been notified to the sanitary authority preventive measures would have been immediately taken in the interests of the patient herself as well as her family, and she would have been instructed as to what steps she should take to prevent the possibility of conveying infections to her young family and to the other residents in the house.

As showing how necessary it is for definite and plain instructions to be given to sick patients and *apropos* of tuberculosis, I heard incidentally a short time since of a patient who was attending a dispensary in a remote district in Ireland, and who was suffering from incipient

pulmonary tuberculosis. The medical officer, on questioning the patient as to his daily dietary, he replied that he generally took tea three times a day and would take it oftener if he could get it. The doctor prescribed for him, and, amongst other things, told him that he should eat more "animal food" and partake of less tea, and asked him to return to the dispensary in a fortnight's time to report how he was. The patient returned in due course, and the doctor, on questioning him as to how he felt, the man replied, "Doctor, I do not feel much better. I tried to carry out your directions as to the animal food. I found I could manage the oats and the beans fairly well, but the chopped hay 'bet' me out altogether."

#### THE PUBLIC MILK SUPPLY.

The regulations under the Dairy, Cowsheds, and Milkshops Order have not hitherto been adopted as generally as they should have been. There are in Ireland two hundred and thirteen Rural District Councils, ninety-five Urban District Councils, and six County Borough Authorities, and out of this number only forty-five Rural Districts and forty-three Urban Districts have adopted the Dairy Regulations; in all the County Boroughs the regulations have been adopted. The object of the Dairy Regulations is to give the sanitary authorities a greater measure of control over the milk supply as well as the sanitary condition, ventilation, &c., of cowsheds.

It will thus be seen that, comparatively speaking, the Dairies Order is at present but little availed of throughout the country, and the great milk-producing areas, the Rural Districts, have not adopted the regulations. This is regrettable in view of the fact that so many districts are largely milk-producing ones and are the main sources of supply to so many of our large towns.

It is, I regret to say, a fact that country cowsheds and country milch cows are, as a rule, kept at a much lower sanitary standard than those in towns—the cows are crowded together in ill-ventilated and badly-lighted



sheds, and practically no attention is paid to the hands and personal cleanliness of the milkers. There is usually a large accumulation of manure within a few feet of the cowsheds, and the hind quarters of the cows are generally in a filthy condition; the drainage is defective, with the result that in the dairy-yard adjoining there is usually a stagnant pool of foul-smelling liquid. The cubic air space allowed to each cow is also generally below the standard.

As I have before stated, it is the exception much more than the rule in country districts in Ireland for the regulations under the Dairies, Cowsheds, and Milkshops Order to be adopted, and local personal interests are not infrequently a hindrance to their adoption by the District Councils—the vast majority of the members of these bodies being engaged in agricultural pursuits, and thus interested in the question of milk supplies.

The purity of the public milk supply is a matter of extreme importance, and has fitly formed the subject of legislative interference. It is an indispensable article of food, and practically forms the exclusive diet of a large proportion of the most susceptible class of the population—viz., the infant and invalid community.

It is notorious that milk is one of the most favourable media for the rapid growth and multiplication of bacteria; therefore, a milk containing particles of manure is bound to be rich in bacteria, and in a condition most favourable for putrefactive changes.

In a milk-producing district not very far removed from the capital, and which daily sends very large quantities of milk by rail to Dublin, I have been a witness of conditions the reverse of sanitary in cow sheds and dairy yards which made one feel whether it would not be wiser to avoid partaking of milk as an article of diet altogether.

In this district the Dairies Order is not in force, and the Council has made no effort to avail of the power that would be given by the adoption of regulations under the Order.

The Local Government Board for Ireland have had

under consideration the question of promulgating an Order revising the existing Orders and Regulations relating to the administrative control of dairies, cow sheds, and milk shops in Ireland. The principal effect of the Order will be to consolidate the previous Orders and to extend to the whole of Ireland regulations, most of which are at present in operation in a limited number of Urban and Rural Districts.\*

These regulations provide for the registration of all persons carrying on the trade or business of a cowkeeper, dairyman, or purveyor of milk, and for the proper inspection of the premises.

The Order also contains important regulations as to the inspection, cleansing, lighting, ventilation, drainage, water supply, &c. It also provides that it will not be lawful for any person following the trade of cowkeeper or dairyman to allow any person suffering from pulmonary tuberculosis or any other infectious disorder to milk cows or to handle vessels used for containing milk for sale, or in any way to take part or assist in the conduct of the trade or business of a cowkeeper or dairyman, purveyor of milk, &c.

It has been firmly established that of all media for spreading infection milk is one of the most potent. Time after time outbreaks of infectious diseases, such as enteric fever, have been traced to the milk supply.

The object of the proposed Dairies Order is to still further safeguard the public milk supply and to place all districts, both Urban and Rural, on an equal footing throughout the country.

The consumers of milk naturally look for protection to the sanitary authorities throughout the country, and they expect that these bodies will make it impossible for vendors to sell and distribute milk that may be the medium of conveying disease.

This Order will do much to prevent tuberculous milk being distributed. In it the local authorities will possess

\* The General Order referred to has since been issued and came into operation on May 1st, 1908.

an effective weapon which should ensure the production of a pure milk supply. Of course, a great deal will depend on the manner in which the local authorities will administer its provisions; but I feel confident that, once it is realised how vitally important it is to have a pure milk supply, the necessary steps will be taken to ensure its thorough administration.

The need for a closer supervision of the entire milk supply throughout the country by the local authorities has in recent years been established beyond doubt, and in view of the fact that there is an excessive prevalence of tuberculosis in Ireland it becomes a matter of very urgent importance that every precaution should be taken to guard against the spread of disease through the milk of tuberculous cows, and in this direction the sanitary authorities will, it is earnestly to be hoped, in future give a willing, helping hand.

With regard to the question of tuberculosis as it affects meat, it has been clearly established that all meat intended for human consumption should be killed in a public abattoir under skilled supervision. Practically all through Ireland there is no skilled supervision exercised in the killing of meat.

In Dublin I much regret to have to state that by far the greater number of cattle and sheep are slaughtered in private slaughterhouses without any skilled supervision—a state of things that is not satisfactory. As this question has been already dealt with by Professor Mettam, I merely make a brief reference to it.

It is, however, much to be regretted that the public abattoir in Dublin is not availed of as it should be, and that such large quantities of meat are killed without adequate supervision. The want of skilled supervision over the meat supply applies generally to the entire country—Dublin and Belfast excepted.

For the ultimate eradication of consumption there is an urgent demand for all measures that will tend to educate and train our people in the principles and practice of hygiene, the provision of better houses, and the

prevention of overcrowding in these houses when built, wholesome food, less alcohol, continuous employment, and, in fine, an improvement in the general sanitary administration of the country. Clothed in armour such as this we can confidently go forth with certainty of defeating the advancing foe of tuberculosis.

It cannot be denied that more vigorous administration of the Public Health Acts would materially assist in the crusade against tuberculous diseases. The continued high death-rate from these diseases throughout the country should prove an incentive to the sanitary authorities to become widely awake and to see that the causes that tend to the continuance of the high death-rate are seriously and actively grappled with. It is in their hands that the ultimate victory over tuberculosis will rest, by the active and efficient administration of the Public Health and kindred Acts which are committed to their keeping.





NEW WARD, FEMALE CONSUMPTION HOSPITAL, SOUTH DUBLIN UNION.



## THE CONSTRUCTION OF CHEAP SANATORIA FOR WORKING- CLASS CONSUMPTIVES

OWING to the difficulty in persuading members of the working class to avail themselves of workhouse hospitals, and also owing to the fact that in comparatively few of these institutions suitable provision is made for consumptive patients, the time is now considered ripe to draw the attention of our local boards and other organisations who are interested in the question to some modern views on the cost of erection and maintenance of cottage sanatoria.

Many competent authorities are now quite satisfied that the treatment of consumptive patients can be satisfactorily carried out in wood and iron buildings well lighted and ventilated and secured from ground damp.

The actual cost of such buildings depends so much on situation and distance from railway station or port, and nature of water supply and drainage, that it is only possible to gather an approximate idea of the cost for any given site. The Female Consumptive Hospital in the South Dublin Union is a building of this type. It was built twenty-one years ago at a cost of £1,200, and was converted to its present purpose three years ago. It contains sixty beds, with kitchen, dining-room, laundry, bath-rooms, lavatories, &c., and two additional wards with accommodation for twenty-four patients were added last year at a cost of little more than £300.

In December last an estimate was obtained for a proposed auxiliary hospital for consumptives in connection with Limerick Workhouse. This building of wood and iron for fifty-eight patients, containing four wards 35 feet by

30 feet, and two wards 42 feet by 20 feet ; height 9 feet ; also two ward annexes, each to contain two baths, two w.c.s, slop sink, and six basins, also administration block ; consulting room, 12 feet by 10 feet ; laboratory, 12 feet by 10 feet ; two nurses' duty rooms, dining-room, 25 feet by 14 feet ; kitchen, 14 feet by 14 feet ; scullery, larder, stores, &c. Brick chimney and 4-feet range for kitchen ; all foundation for ordinary level ground, all shelving for larder, linen-room, scullery, and store.

Boiler and heating-chamber underneath kitchen floor, hot-water system throughout, all fittings to lavatories, &c., hot and cold supply to baths and basins, &c. The entire cost of this building, ready to join to cold water supply and drains outside building, was to be £1,639, or about £25 per bed.

In working this out for a cottage sanatorium one is at once met by the difficulty that it is not possible to reduce the administration to any great extent. The wards and rooms can be heated by stoves, which are much cheaper than fireplaces, but as hot water must be provided for baths and laundry purposes no great saving can be effected on this item.

It is believed that an adequate cottage sanatorium to accommodate 20 patients, consisting of four wards, with suitable administration block, containing doctor's room, two nurses' rooms, dining-hall, or recreation room, kitchen, scullery, store, linen-room, pantry, and simple laundry, with bathrooms and lavatory accommodation, kitchen-range and brick chimney, fitted with stoves in wards and rooms, baths, lavatory fittings, can be erected for £900. This would be exclusive of drainage outside the building, and for ordinary level ground within reasonable distance of railway station. Such a scheme might be suitable for small towns where the sanatorium could be within reach of the doctor's residence. The administration would not be costly, probably about 15s. per head per week would cover all charges.

So far as possible existing institutions should be used. It is not desirable in a poor country like Ireland to

endeavour to multiply institutions, so it must be remembered that in addition to the cost of providing them there will be the continuing expense of maintenance. For this reason, and also because they can be more easily provided and cheaply maintained, it would be well in the first instance to endeavour to induce boards of guardians in Ireland to establish cheap buildings such as are suggested in their workhouse grounds. Buildings have already been erected for fever hospitals, and if, in addition to obtaining some disused workhouses, small, simple hospitals for consumption were erected in connection with workhouses, we would have in a few years a network of such hospitals all over the country, situated in or near the principal towns. No difficulties or expense would arise in connection with sites or land or sewerage or water, and the cost of administration would be considerably reduced. In such hospitals people who desired to pay could avoid all taint of pauperism by paying the average weekly cost of maintenance, and the poor could have free attendance; and, as the consumptive hospital would be detached from the workhouse, the working classes would have less repugnance to using such hospitals.



# CONFERENCE ON DISTRICT NURSING AS IT BEARS ON THE TREATMENT OF TUBERCULOSIS

H. E. THE COUNTESS OF ABERDEEN in the Chair.

HER EXCELLENCY said the proceedings in the Village Hall would not have been complete were it not that they had been able to arrange to have a conference on district nursing as it affected tuberculosis. They had been very fortunate in having been able to persuade Miss Guy, the Lady Superintendent of the Royal Victoria Hospital for Consumption, Edinburgh, to come over to tell them something of her experience.

Miss Guy, Lady Superintendent of the Royal Victoria Hospital for Consumption, Edinburgh, said: In venturing to offer a few thoughts regarding the significance of district nursing and the *rôle* to be played by the outdoor nurse in the movement against tuberculosis, you will allow me to advance as a plea my long attachment to this work and my deep interest in the cause. It is now more than thirteen years since, on the invitation of Dr. Philip, I left the Royal Infirmary of Edinburgh to occupy the post of Lady Superintendent of the Royal Victoria Hospital for Consumption, Edinburgh.

That institution is not an hospital in the limited sense of the term. It endeavours to overtake the various aspects of the tuberculosis problem, so far as those are represented in a large city like Edinburgh. The hospital began its existence almost exactly twenty years ago, not

as an hospital for resident patients, but as a consumption dispensary, to which persons of the poorer classes, affected by tuberculosis, might be invited and directed.

In conceiving and establishing this institution, which was the first consumption dispensary in the world, Dr. Philip's purpose was to obtain access to existing foci of disease, not merely in affected individuals under examination, but also in other members of the same household and in affected dwellings.

The purpose has been realised beyond all expectation. Close on one hundred patients have come to the dispensary in one day, and as many as 17,000 attendances were recorded last year. The dispensary serves, on the one hand, as a bureau of information and assistance in all matters concerning tuberculosis, and, on the other, as a "clearing-house" for the various sorts of consumptive patients brought under its notice.

It seems doubtful if the frequency of consumption is truly realised by most persons. Have you ever thought how many cases of consumption exist in such a city as Dublin? I cannot speak of Dublin, but I know a little about Edinburgh. On an average, some four hundred persons die annually of consumption in that city. Dr. Philip has calculated that the ascertained mortality from consumption in any city may be safely multiplied by twenty in order to represent approximately the number of persons living who are already definitely affected. In such a city as Edinburgh, then, it may be reckoned that more than eight thousand persons are already affected by consumption. If we accept this figure as sufficiently near, and if we recall that the great majority of the persons thus included belong to the poorer classes, it will be at once seen that it is impossible to provide adequate treatment and supervision either in sanatoriums or in hospitals for the dying.

It must be kept in view that consumption is a slowly progressive disease, and that for long the patient may be able to do a day's work, in whole or in part. In other words he has to, and in many cases may safely, live at

home. The disease is apt to prove disastrous to the household in many ways, both physically and pecuniary. The patient is frequently reduced from the state of an able-bodied worker to that of a disabled person. In some cases he may be unable to work at all for months or years. Medical treatment, if it is to be effective, is relatively costly, and is apt to cause a further drain on the household resources.

Sooner or later the patient becomes a source of danger, more or less pronounced, according to the relative care or carelessness of himself and those living under the same roof. The risk of infection—slight as it may be in large, well-ventilated houses—is much greater in the contracted dwellings of the poor.

The wretchedness of the picture is increased by the shortcomings which advancing poverty brings to the household, and the physical strain put on relatives—perhaps themselves delicate—in their effort to undertake work for which they are unfitted.

Experience in handling the large and varied consumptive material at the Victoria Dispensary soon showed the necessity, not only for sufficient hospital accommodation both for early and advanced cases of the disease, but the *urgent need for a systematised plan of house-to-house supervision and relief.*

It is at this point that the trained nurse appears on the scene. And let me say at once that it is of the first moment *that the nurse who undertakes this duty should have been carefully educated in modern open-air methods.* In the case of the Royal Victoria Hospital for Consumption it is one of the nurses trained under my own eye who is transferred from time to time to this department of the work. The nurse is attached to the dispensary, and receives the names and addresses of patients to be visited, and gets generally her directions from one of the physicians attached to the dispensary. Under his eye, and in co-operation with the ladies who form the Samaritan Committee of the dispensary, she visits the patients at their own homes. By her ready



tact and evident knowledge and interest she quickly gains their confidence. During all the years since the dispensary was founded no difficulty has been experienced in relation to the nurse's visits. She distributes printed rules and teaches the patients or their relatives both how to treat and how to prevent the disease. Where the circumstances demand more frequent attention from the medical man she reports this at once, and similarly when there seems more pressing need for formal disinfection or other sanitary measures.

In every case she makes a detailed and systematic report regarding the patient's residence and other conditions according to a Schedule of Inquiry, prepared for the purpose by Dr. Philip. Her report, when completed, is signed and passed to the doctor, who, after revision, countersigns it. Once a fortnight the Samaritan Committee of Ladies meet and, in conference with the doctors, consider the most urgently distressing cases, where the pecuniary resources have been unusually reduced. In co-operation with the nurse a member of the committee visits the patient's house, and, availing herself of the various charitable and parochial organisations in the city, administers suitable relief. The Samaritan Committee also endeavour to find suitable light work for consumptive patients, who, while unable to work an entire day, can still do something to help themselves. They take into consideration the case of school-children, with a view to have them reared and educated on physiological lines.

The records made by the nurses on the schedule to which I have referred yield important facts with reference to consumption. Thus, details have been obtained as to the frequency of the disease in children and in housewives; its recurrence in certain houses and streets; its association with varying insanitary conditions of dwellings; the extreme frequency with which one or more persons share a room, or even a bed, with the consumptive patient; the varying amount of fresh air admitted into the dwellings by day and by night; the extraordinary extent to which the household washing is done in the

affected dwellinghouse; the frequency with which the consumptive patient changes his house, thus multiplying the infection again and again; the frequency with which a previous family- or house-infection can be traced; the entire absence, in the majority of cases, of precautions with a view to disinfection either during or after the illness, and the effect of the disease in producing physical and financial distress in a more or less wide family circle.

In conclusion, I may be allowed to say, from a considerable experience of the value of nursing effort, both in hospital and district work, that I can conceive of no department of nursing which is so likely to be fruitful of great and permanent benefit, not only to the sick persons immediately concerned, but to the community at large, as just such house-to-house work among the consumptive poor as I have attempted to sketch for you.

The time at my disposal since receiving your Excellency's kind invitation has been necessarily limited, and I fear that points familiar to me may have been too lightly passed over and some points of interest may have been omitted altogether. I need not say, however, that, should it seem serviceable, I shall be most pleased to answer any questions regarding a system which, at least, has the merit of having been thoroughly tested during all these years in Edinburgh.

MISS FITZGERALD KENNY, Local Government Board Inspector of Boarded-out Children, said: I presume that the kind invitation I have received to contribute some observations on the subject of district nursing in relation to the prevention and cure of tuberculosis is due to the fact that for the last ten years I have been keenly interested in the district nurse, and have had much experience of the results of her work, and, as a consequence of that experience, am a thorough believer in her value. The help that can be looked for to the district nurse is of many kinds. She is in such close

contact with the poor that she easily detects a consumptive amongst them. More than this, she can put her hand upon the cases of suspicious colds, and draw attention to them even when the patient may himself be feeling fairly well, and be unwilling to consult a doctor. In this way she can bring people to let themselves be medically treated while they are unaware of their own danger, and at a stage of the ailment when treatment can be effective and successful. Again, she can see that the remedies prescribed by the doctor are carried out. I believe it is almost a universal complaint amongst doctors—in the West of Ireland I know it to be only too well founded—that patients will not carry out the orders given them, especially if those orders be irksome and exacting. Perhaps we have outgrown the state of mind which prohibited any medicine being given until its effects had been tested by a dose administered to a dog or a cat; but we are far from having yet fully realised the extreme importance, especially in reference to tuberculosis, of an exact compliance with all details of the doctor's directions. Nor would the establishment of sanatoria diminish the need of the services of the district nurse. In fact, it depends upon her to see that the treatment adopted with such good results in the sanatorium shall be continued, so far as circumstances permit, after their return home, and that their old negligent habits shall not be resumed. If the project of establishing consumptive dispensaries were realised in Ireland the need of special district nurses would become not only urgent but imperative.

Perhaps I could do no more practical service than to detail the working of the corresponding system in Paris of which I have made a careful examination on the spot. This system is far in advance of the best that has been attempted in our own country. The Paris treatment is largely through local dispensaries—known as the Calmette dispensaries—which are attended by trained nurses. One of the most successful of these is that established by Mdlle. de Chaptal, to which, through the

courtesy of the founders, I have been able to make several visits. Mdlle. de Chaptal (a lady of position and wealth, and greatly interested in the poor) determined to attack consumption in the most infected district of the city. She found the death-rate to be highest in the Plaisance, which is the workmen's quarter. She opened a dispensary here—a number of influential friends contributing help. In four years she had succeeded in reducing the mortality from consumption by one-half. In 1900 there were 91 persons suffering from consumption or chronic bronchitis to every 10,000 of the inhabitants. In 1904 there were only 49.

Mdlle. de Chaptal had the good sense not to spend much upon buildings. She rented a small shop, which she altered to suit her purpose. It contains four small rooms. The first is used as a waiting-room. It contains, in addition to a few benches, a weighing-machine, on which patients are weighed every fortnight, and an inhaler which each patient uses three times during his visit for five minutes each time. In this room the chief nurse takes down particulars of each new case, including its history. The second room, which is very small, is reserved for the nurse who administers injections. The third room is set apart for the doctor's use; here he sees his patients. In the fourth room all the cupping instruments and instruments for examining cases of laryngitis are kept, under charge of a third nurse. The arrangements provided are, therefore, of the simplest and most inexpensive character.

A most valuable part of the work is the laundry, carried on in the cellar of the house, for the proper disinfection of the patients' linen. Each patient brings his linen once a week in a water-proof bag. This bag is taken, unopened, down a special staircase to the cellar. After several processes of disinfection it is taken away by a different staircase.

The dispensary gives milk, eggs, and meat to the very poor. It is open twice a week from 5 p.m. to 7 p.m.

I would say that the system could easily be adopted in Irish towns.

We may have to devise a system of our own for remote country districts. Perhaps some such dispensary might be established as an *annexe* to the district nurse's house. The local doctor might meet the patients there and prescribe for them. The majority of district nurses in Ireland belong to the Jubilee Institution. These nurses are very highly trained; they have a fine *esprit de corps*, the advantage of an experienced superintendent to look to and confide in, and an influential organisation to assist them. They would be, therefore, eminently qualified to assist in taking charge of the local consumptive dispensaries.

It must be confessed that the difficulties under which nurses in such remote districts labour are formidable enough. The area entrusted to them is very extensive, and the number of calls large. They often live at a long distance from a butcher's shop, and it is difficult for them to obtain supplies of meat without incurring heavy expenses through the parcel rates. In this matter a local committee could be of substantial help to them.

I fear I have unduly occupied your time, but I trust the result of our deliberations will be to bring trained nurses into the homes of the poor, and so contribute to diminish the toll of deaths and the sum of human suffering amongst us.

MR. W. WALKER, of the Congested Districts Board, gave an interesting description of the splendid work done by Lady Dudley's nurses in the West of Ireland, and of the circumstances governing the lives of the peasantry in the districts in which the nurses were stationed. He spoke of the devotion of the people to Lady Dudley in the West, and said he was sure that from many hearts prayers were being offered up for her speedy restoration to health.

DR. BERMINGHAM, Westport, also addressed the meeting.

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THE MOST REV. DR. DONNELLY, Bishop of Canea, proposed a vote of thanks to Miss Guy and the other speakers, and spoke of the benefits that would accrue to Dublin by the establishment of a consumptive dispensary with special nurses attached.

PROFESSOR MCWEENEY seconded the vote, which was carried by acclamation.

The nurses present adjourned for tea and further conference to the Prince's Restaurant.





# HOW TO REDUCE MORTALITY FROM TUBERCULOSIS

BY DR. H. B. STEEDE, of the Rostrevor Sanatorium.

DR. H. W. SMARTT in the Chair.

OF all Irish problems, by far the most important, to my mind, is this one—viz., how to reduce the mortality from tuberculosis—and there can be no more effective means of making widely understood what can and ought to be done to effect this reduction than this Tuberculosis Exhibition. This gradual awakening to the necessity for action is bound to do an immense amount of good, but in order that it may have its proper effect all must combine to do what is necessary. If it were possible to get every individual in the land to do his or her part in the prevention of the disease, the mortality from tuberculosis would very quickly diminish. To give any possible help in the movement is for me a privilege and a pleasure. We all know that the annual mortality from tuberculosis in Ireland is about 12,000; this is, that on the average 33 individuals—most of them young adults—die each day from the disease, and this has been going on for years, with but comparatively feeble efforts to make matters better. The mortality has been far too frequently regarded as practically inevitable, and quietly borne with a sort of mistaken resignation, just as though it was not possible, or was not worth while, to make any serious effort to save so many lives. This was natural before the cause of the disease was known, and before it was known what measures should be taken to prevent its spread. But it is now twenty-five years since Professor Koch discovered the tubercle bacillus, and proved that no individual ever has been, or ever can be, afflicted

with tuberculosis unless this germ has in some way entered his system, and entered it in most cases in very large numbers.

It followed at once from this discovery that the disease should be capable of prevention, that efforts to stamp it out should in time be successful, as they have been practically successful in the cases of other infectious diseases.

If any railway accident occurred in which 33 individuals were killed, every investigation would very properly be made to find out the cause or who was in fault. Is it no one's fault that, say to-morrow, 33 individuals will die from tubercular disease in Ireland? Is it not a fact that nothing like this number of deaths would be now occurring daily if more preventive measures had been taken in the past?

I think the chief purpose of this Exhibition and the lectures you have heard is to bring home to the minds of all that it is possible, and that it is, therefore, morally necessary, to effectually reduce this tuberculosis mortality; and it is the well-known facts as to the common channels of infection, and the more or less obvious corresponding means of prevention, that to my mind most need to be further published and emphasised.

It is possible for the disease to be communicated in three ways—viz., by inoculation, ingestion, or inhalation. We are only concerned with the two latter, ingestion and inhalation—that is, we may become infected either by swallowing the bacilli or by taking them in with our breath.

And here I would like to guard against a possible misunderstanding. Probably we all have both swallowed and inhaled tubercle bacilli. Fortunately, we have not all got consumption. Other conditions are necessary or infection will not follow. The dose must be large and frequently repeated, or the individual pre-disposed to the disease. What will do no harm to one man may, perhaps, infect another who has less special resisting powers. Still, the fact remains that, no matter

how prone a man may be to disease, it cannot develop unless the tubercle bacillus was in some way afforded an entrance to his system, and our first duty is to see as far as we can that what we eat and drink, and the air we breathe, do not contain the essential germ.

As to our food, the chief source of danger, and the one which should be attacked most energetically, is undoubtedly impure milk. Members both of the medical and veterinary professions have joined in emphasising this fact. Every tubercular cow does not give tuberculous milk, but if the udder has the disease the milk is sure to contain large numbers of tubercle bacilli. Now, if we take on chance 300 milch cows, it has been variously estimated that of these from one to five will be found to have tubercular disease of the udder, and to yield milk laden with the germs of tuberculosis. Mr. T. W. Russell tells us that the total annual milk production in Ireland amounts to 475,000,000 gallons, and that of this amount 75,000,000 gallons are used as food. It follows, therefore, that the number of gallons of milk laden with tubercle bacilli, and used annually for human food, has been variously estimated to be from a quarter of a million to a million and a quarter.

And up to the present almost no practical steps have been taken to prevent this milk being consumed. Fortunately, it must often be consumed with impunity, otherwise the tuberculosis mortality, great as it is, would be very much greater. But it has been proved that cows with tuberculosis can give the disease to man, and it is practically certain that of the 12,000 who in this country die every year from tuberculosis, many, especially children, owe their deaths to the drinking of tuberculous milk.

Surely matters need not be as bad as this? There is no use in wasting energy in advocating any measure not within the range of what is practically possible, but I believe we should be well within that range in urging that all cows with tubercular disease of the udder

should be destroyed, and some compensation given to their owners. We cannot hope to have these cows destroyed without some scheme for compensation, and we shall not get the compensation unless there is for it a widespread popular demand. The only difficulties in having this done are pecuniary difficulties, and I believe no public money could be better expended.

I do not mean that all cows that react to tuberculin should be destroyed. This is not necessary, and would be quite impossible; but the number of cows that have the disease in the udder is not so very great, and their elimination is, I think, possible.

If the public generally realised how matters stand I am sure they would not object to some expenditure for the sake of a pure milk supply. To stop the production of tuberculous milk would mean to dry up a large source of the tuberculosis amongst ourselves and our children. This is a measure, however, that requires State interference.

More important still are the common measures, depending more directly on ourselves in the careful management of the expectoration of every consumptive. As you all know, an advanced case may daily cough up millions of tubercle bacilli, but these germs are confined to the expectoration, and with cleanliness and proper care a consumptive should be no source of danger to those around him.

In the case of a well-to-do patient the necessary precautions are very easily carried out, but if he is helpless and poverty-stricken they are sure to be neglected, and his room tends to become a hotbed of infection. It has been proved that the bacillus quickly perishes if exposed to fresh air and sunlight, but has been found living and virulent after many months in the dust of close, badly-ventilated rooms. If anyone susceptible to the disease shares such a room with a consumptive, or, as is too often the case, takes up his abode in it without any proper cleansing or disinfection after the consumptive dies, is it any wonder that he too contracts the disease?

and we know that in every large town there are crowds of such dwellings—well described as veritable nests of tuberculosis.

How common are such rooms? Amongst consumptives of the poorer classes in Ireland they are, unfortunately, the rule. Ignorance of the serious risk of infection and the difficulties of poverty make the task of improving matters seem almost hopeless. Want of ordinary cleanliness, unsuitable food, ignorance, and neglect, not only of the special precautions against tubercular infection, but of the most elementary laws of sanitation, are conditions which prevail amongst the poor both in the crowded slums and in the country cottages. In the slums the evil effects of overcrowding are added, and matters are at their worst. These, I believe, are the reasons why consumption is still so rife in Ireland. Other countries have improved. We are only beginning.

In this respect it may be instructive to look at Scotland, as it affords both a contrast and a parallel to the state of affairs in Ireland. In 1871 the death-rate from consumption in Scotland as a whole was 2.7 per 1,000, while in the insular country districts it was only 1.6. Thirty years later the general death-rate from consumption in Scotland had fallen to 1.5, although during the same period in the insular rural districts, where conditions of life correspond in many ways with those of the country districts in Ireland, it had increased to 1.7 per 1,000.

In explaining these figures Dr. Bramwell says:—The great decrease in the mortality from consumption which has taken place in all parts of Scotland except the insular country districts . . . is no doubt largely due to improved sanitation—using the term in its widest sense—and improved conditions of life, rather than to any measures specially directed against consumption.

It is probably also largely due to the segregation treatment of advanced cases in hospitals and workhouses.

The prevalence of tuberculosis in insular rural dis-

tricts—like the country districts in Ireland—is probably in great part due to the deplorable conditions which exist in these districts. This shows the great importance of general sanitary measures in dealing with the disease.

We want to improve the conditions of home life, to teach the people that it is possible, without spending more money than they do at present, to have better food, purer air, and more healthy homes. In doing this the Women's National Health Association must effect a vast amount of good. Consumption is a house disease, and if all, or even the majority, of the women of our country were enlisted in this crusade against tuberculosis, and were resolved to keep their houses free from infection, the battle would be more than half won.

How is a consumptive's house to be kept free from infection? Well, I should like to make certain that no one in this hall—that no child—should be ignorant of the fact that the infection lies in the expectoration, and for practical purposes in the expectoration only. I want every child to know that it is not the consumptive that is dangerous, but his expectoration—the spit that he coughs up. And that, moreover, the expectoration itself is no more dangerous than gunpowder if it is properly handled. The expectoration contains millions of microbes, but these cannot move of themselves, and as long as the expectoration is moist they will not be blown about in the air; but if any particles of expectoration are allowed to dry on handkerchiefs, bedclothes, dirty vessels, or elsewhere, then the conditions are such that minute infectious particles will be carried about in the air, will mingle with dust, and the room becomes infected.

If a fire is at hand, one of the best ways of dealing with the sputum is to receive it on a piece of paper and immediately burn each spit as it is coughed up. On an ordinary fire you can only burn at one time a very small quantity of sputum. If you try to burn any larger quantity there is great danger that some of it will fall through the fire and be only dried. Or, if the expectoration is not immediately burned, any vessel may be used



as a spittoon, but care should be taken that no sputum is allowed to dry on its sides. The spittoon should frequently be thoroughly cleansed, and, if possible, with boiling water. The room should be as free as possible from all dirt and from dust, and from anything that may collect dust; and, lastly, the great purifier—fresh air—should be admitted as freely as possible both day and night.

I am sure you have heard all this over and over again, but these matters are so important that I think they cannot be too often repeated. Surely, too, more could be done in our national schools to further these objects. The buildings, I know, are in many instances shamefully inadequate, and make it impossible for the school to be anything like a proper object-lesson in sanitation; but it should still be possible to do more than is done at present to teach the children the most elementary principles of hygiene, and in particular the danger of spitting and how to avoid tubercular infection.

I have known more than one school teacher who, after a course of treatment in the National Hospital for Consumption, resolved, wherever possible, to hold his class out of doors—an example which, I think, might frequently be followed with advantage.

In how many cottages do we commonly find that the only ventilation is that which is unavoidably afforded by the chimney and the door; and how largely do bread and tea and whisky figure in the articles of diet? Porridge, buttermilk or sour milk, vegetables, and home-cured bacon are comparatively neglected. While I was working in the National Hospital for Consumption I was surprised to hear from many patients that they had never eaten porridge until they came to the hospital. Stimulants, as we should expect, were usually considered necessary in order to keep up their failing strength, and too often the worse they got the more the whisky was increased. On coming to hospital the sudden change in diet and habits, and the constant fresh air, worked in most cases a marvellous change.



To find an explanation why consumption is so prevalent in Ireland, I am quite convinced that it is not fair to abuse our climate, or our manufactures, or emigration, or the constitution of our race. Reasons why we should not ascribe the fault to any of these have been well given in a recent lecture by Sir John Byers. We have ourselves to blame, and the sooner we all recognise the fact the sooner shall we arrive at the proper remedies.

The consumptive poor constitute the great difficulty. It is from the poor and crowded populations that the death-rate from consumption chiefly arises. They afford the chief source from which the disease is constantly renewed. It is in their houses that the poison chiefly lives, and is passed on from one inmate to another. In most cases the patient and his friends are profoundly ignorant of the nature of the infection, and how it might be averted. In any case, circumstances render any efficient precautions impossible.

Now, I would ask you to consider for a moment the probable effect of taking one such advanced, poverty-stricken consumptive, removing him to hospital, and thoroughly cleansing and disinfecting his house. Though an advanced case, the patient himself may be greatly benefited. In any case, neither he nor his house is any longer a source of infection, and is it not practically certain that some are saved from contracting the disease who would otherwise themselves have fallen victims and become fresh centres of infection? We must remember that we are considering the poor, in bad circumstances, who, if they contract the disease at all and are left to themselves, must almost inevitably go from bad to worse.

Suppose we take what I believe to be a low estimate. We may say that the probable effect of the isolation of one advanced and poor consumptive, and the disinfection of his house, will mean the ultimate saving of ten lives. Is it not worth doing?

It is true that the number of such cases is so great that it is an impossibility to treat satisfactorily more

than a very small proportion. At present our means of dealing with such cases is ludicrously inadequate. But the magnitude of the problem is no reason why more should not be attempted. If we cannot save thousands it is none the less worth while to save hundreds.

Many—or, indeed, most—people, if they think at all of consumption being infectious, are too apt to regard it as infectious in the same sense as, for instance, typhus fever, scarlatina, or small-pox, and are often absurdly afraid to have anything to do with a consumptive. This unreasoning and groundless fear adds needless difficulties to the many necessary ones that have to be reckoned with in our endeavour to benefit the consumptive. It makes the provision of public sanatoria more difficult, and, as I have found from experience at the National Hospital for Consumption, it increases administrative difficulties. And then when the consumptive is well enough to take his part in the world it sometimes takes away his only chance of getting suitable employment. My own children, ever since their birth, have been more or less with consumptives, first at the public hospital in County Wicklow, and now at Rostrevor. Their nursery-maid was a consumptive, who was treated at the Wicklow Hospital eight years ago. She had eight years ago one lung damaged, temperature high, and the tubercle germs in her expectoration, but made a good recovery, and completely lost all cough and expectoration. I need hardly say I should not have allowed her to be nursery-maid if I thought there was any risk of infection.

Another old Wicklow patient who has had the disease for years has been now for over twelve months constantly at work in my employment at Rostrevor. His work begins at six o'clock in the morning, and he has never missed a day.

With suitable precautions there is no risk of infection whatever in the employment of such cases. I should wish, therefore, to emphasise the fact that consumption is not infectious in the same way as typhus or scarlet

fever; that a consumptive, always provided he takes suitable precautions, is not a source of danger, and that there is much less risk of infection in any well-managed sanatorium than there is in any room frequented by the public.

In the prevention of tuberculosis the present most urgent need is the provision of means for the care of the consumptive poor, and we badly want some organisation for this purpose. We have at present some individual effort, but no far-reaching system. What can a medical man do for a poor consumptive who has not the means to buy the necessary food, and who must share with his family the disease-producing air of one or two small rooms? As Professor Osler said in the opening lecture of this Exhibition in Dublin, we ought to be able to give such a man a free ticket for six months' residence in a sanatorium, and, if necessary at the end of that time, renew the ticket for another six months.

I wish we could do so, but, unfortunately, while there are 120,000 consumptives or thereabouts in Ireland, we are not justified in aiming so high. We want sanatoria for early cases who show a fair prospect of recovery. Still more do we want accommodation for advanced cases in order that we may break up and destroy those nests of tuberculosis. And there will still be left the very large number of both early and advanced cases who either will not or cannot leave their homes. We want some organisation to deal with these cases, to do the best that is possible for them under the circumstances, to find suitable employment for those able to work, to improve the home conditions of all, and to save their fellows from contracting the disease.

For these purposes Dr. Philips strongly advocates the establishment of tuberculosis dispensaries, such as he has had working in Edinburgh for a great many years. These special dispensaries have also been found most successful on the Continent, especially in France. He describes and urges the general adoption of an ideal organisation, of which the tuberculosis dispensary is the

head and centre. Connected with and subject to this chief centre he would have a sanatorium for early cases, a hospital for advanced or dying cases, and a working colony. He also includes compulsory notification as being essential to his scheme. Such a complete organisation as this seems far off. Could not our existing machinery be devolved and brought to bear more directly on tubercular disease?

We have already an admirable dispensary system, but could not the doctor be given more help, more district nurses under his direction, more means of every kind, and, if I may be permitted to say so, more pay, so that he may be in a position to deal more effectively with patients in their own homes? If he cannot give a free ticket to a sanatorium ought he not be able to have, for instance, rubbish cleared out of a patient's room, to have what is worth preserving disinfected, to order a supply of what may be absolutely essential, and then have a district nurse to see that the room is kept in an approximately healthy condition? It is easy to make suggestions. I know I am speaking in the presence of those who understand better than I do the difficulties involved in extending the work of our already overworked dispensary doctors, but it does seem clear to me that where the sanatorium or the hospital is impossible, development of means such as I have indicated forms the only resource, and their cost would be comparatively small. But for this battle with tuberculosis money in any case is a necessity. The only question should be how the money can be most profitably spent on our dispensary system, so that we might have over the whole country anti-tuberculosis dispensaries, each of the same kind as that so strongly advocated by Dr. Philips and others, and at the same time put much more power for good in the hands of our dispensary doctors, on whom the welfare of the country so much depends? The most essential part of the machinery is already there. All that is needed is more money and more organisation.

Are we to spend money in providing and maintaining

public sanatoria? I should say that certainly we must do so, but not at the expense of other measures. Sanatoria are necessary. Their methods afford the best known means of restoring the consumptive. But sanatoria have done much more than directly benefit the patients treated. They have proved beyond question the value of what is known as the open-air treatment. To sanatoria more than anything else is due the general knowledge of the fact that consumption is by no means the hopeless disease it was usually considered to be.

I can myself remember, before I knew anything of medicine, going round a county infirmary with the visiting doctor—a man since dead, but who then had a large practice and a very high reputation. I very distinctly remember his pointing out to me a healthy-looking girl, who, he said, had consumption in a very early stage, and he added, “That girl will be in her grave in six months.” Perhaps he was unduly pessimistic, but where now could a medical man be found who would take as gloomy a view as this of an early case of consumption? And is not the contrast due chiefly to the known results of sanatorium treatment?

It is noticeable, too, that a just appreciation of fresh air in the sanatorium sense is more common now than formerly. It is clear that sanatoria, especially during the last ten years, have exerted a powerful influence for good on public opinion, but more in this direction must be done. We have only to take a walk in any street in the early morning and glance at all the closed windows to be convinced that this educative effort is still necessary. For this purpose, and in order to treat the individual case, we must have sanatoria, but we must, as Dr. Koch warned us, not rely altogether on sanatoria for the extinction of the disease. Dr. Koch regarded it as beyond dispute that consumption in its early stage is curable; and even assumed that if sanatoria are strictly reserved for early cases, as many as 50 per cent. of those treated may be cured. Still he reminded us that the total effect in diminishing the annual mortality must be

but moderate, that sanatoria unaided by other measures will never get to the root of the evil so that sooner or later it must die out.

For existing consumptives by all means let us have sanatoria, but for the prevention of consumption other and less costly measures are also necessary. We have not unlimited funds, and only a suitable proportion must be spent on public sanatoria.

I have tried to dwell on those points in the prevention of tuberculosis which seem to me to be the most important for us in this country. I have tried as well as I could to roughly indicate the directions in which progress seems to be least difficult, and seems for a given effort to promise the best result. In this movement, as in most actions of our life, we can seldom hope to do the absolutely best. We must only determine what is practically possible, and on that concentrate our efforts. We cannot do all at once, but let us at once do all we can. If we all do our best we may wait patiently for good results. This struggle with tuberculosis will not be quickly or easily won, but we have every reason to believe that with time and perseverance a successful issue is assured.





# THE HOME TREATMENT OF CONSUMPTION

Compiled from Papers and Reports regarding work  
carried on in the United States, kindly presented by  
William Osler, M.D., F.R.S., Regius Professor of  
Medicine in the University of Oxford.

It will be remembered that in Dr. Osler's splendid lecture at the opening of the Exhibition in Dublin he alluded to an interesting experiment being tried by Dr. Pratt, a Boston friend, in establishing a tuberculous class in connection with a church. "Dr. Pratt's first class consisted of fifteen or twenty persons, chiefly young clerks, all in the early stage of the disease, and all still at work. Dr. Pratt met them once a week in a room off the school-room of the church, and there they discussed their cases with him. They were weighed every week, and an entry made of how much they had gained and how much they had lost. Each took his own temperature and brought his note-book, and the result of his first two years' work is a very remarkable record. A number of these young persons have been completely cured without going to a sanatorium, without going away, and while continuing their work." Dr. Osler then promised to send us some more literature on the subject, and also about a systematic plan of home treatment of consumption as

carried on in New York; and, by kind permission, we are able to make the following copious and interesting extracts from the papers thus received.

## THE CLASS METHOD OF TREATING CONSUMPTION IN THE HOMES OF THE POOR.

By JOSEPH H. PRATT, M.D., Boston.

In the great out-patient department of the Massachusetts General Hospital several hundred consumptives seek advice and treatment every year. In my own clinic in that institution I have frequently seen two or three new cases in a single morning. Some of the favourable cases are able to enter the State Sanatorium at Rutland. But there are many more who have families depending upon their weekly wages, and no money in the bank. These are often fairly healthy-looking men and women who say all they need is some medicine to stop the cough or a good tonic to brace them up. Others too ill to work and yet with a good fighting chance for recovery under sanatorium treatment cannot pay even the small weekly charge at Rutland. There is still another group, eager to get well, willing to spend their scanty savings if their life can be saved, and sometimes with kind friends and relatives who are willing to lend them money, who are refused admission to the sanatorium because the disease is too far advanced.

One day I found among the new patients two sisters, sitting side by side in the examining room. The elder presented the more typical picture of advanced phthisis. In the other girl the disease was only just beginning. I called the younger sister aside and explained the nature of her illness, but assured her that if she went to Rutland for a few months in all probability she would get well. If she continued to work, I said, the disease would surely progress and her life would be the penalty. I told her

frankly that her sister's lungs were so extensively diseased that I could not hold out to her any hope of recovery.

She paused a few minutes before speaking and then told her story. Her parents were old and feeble and entirely dependent upon her scanty earnings. With no outward sign of the inward struggle she quickly made her final decision and said, "Before, there was sister and I to work for father and mother, now I am the only one. I cannot leave them."

There was no answer I could make. They left the room and I have never seen them since. Doubtless there were many people who would have been glad to help this unfortunate family, but I did not know where to find them, and there was no organisation to which application could be made, as they lived beyond the city limits and could not look for help to the Boston Tuberculosis Society or the Associated Charities. Furthermore, this, unhappily, was no isolated case. Every physician working in a large dispensary has had similar experiences. Thousands of men and women make this same renunciation. A few months of treatment would probably have restored the girl to health. Yet to meet the conditions in that family, home treatment, not sanatorium treatment, was indicated. The problem, as in this case, is often more complex than providing free treatment in sanatoria. There was the family to be supported and the sick sister needed nursing and medical attention. Thanks to the Reverend Elwood Worcester, Rector of Emmanuel Church, such tragedies are a thing of the past at the Massachusetts General Hospital. If the two sisters had come to the same clinic a year later they would have been referred to the Emmanuel Church Tuberculosis Class, and I could have assured the younger sister that those in charge of the class would find some way to solve the financial difficulties so that she could give up her work and take the rest treatment at home. She would have also been told that advanced cases had done so well in the class that some encourage-

ment might be held out to her sister. The two girls would have gone home cheered and hopeful.

On the following day the friendly visitor would have called and explained to them and the rest of the family more about the class, the nature of the disease, the manner of its spread, the methods of disinfection, and how to get well by taking the treatment. Plans would have been made at once for erecting a balcony so that both girls could sleep out of doors. The friendly visitor would have begun at once the search for a housekeeper if the mother was found to be too feeble to do the work properly and to care for the sick ones. The financial problem would have been attacked at the same time. The employer of the sick girl would have been visited and his aid solicited; the friendly visitor would have called on the priest or minister, and I am sure that his aid would have been secured, for we have never yet appealed in vain to Protestant, Catholic, or Jewish organisations or to charitable or fraternal societies. If all other channels of relief were closed, and if a volunteer visitor of the class was unable to secure loans or gifts, then the actual necessities of the family would have been paid for out of the class treasury until the girl was able to work again.

What the Emmanuel Church Tuberculosis Class has been to its members and what happiness it has brought into their lives is indicated by the following letter sent last Christmas by one of our members who is now, I am glad to say, working after three years of illness and inactivity :—

“CAMBRIDGE, MASS., *December 30, 1906.*

“DEAR DOCTOR WOSTER: I write to turn you thanks and menny thanks for the fine Christmas Dinner I and my family enjoyed. We was the most hapiest of all famleys in Cambridge, made so by you and your Tuberculosis Class. Thanks to God and the noble Christian ladies and gentlemen of Emanuel Church for the saving or extension of my life. A year ago I thought I would have no need for a 1906 Christmas Dinner. Through

the instruction of a wonderful class doctor and a never tiring nurse whos kind words and cheerfullness would make you forget that you was sick and feel like singing as I have often don after she had gorn, and today I can eat as good a dinner as enny men, if in my reach.

“God bless Doctor Woster may you live forever.”

It is important that the class should be small, as the doctor and the friendly visitor must establish close personal relations with each member. In the Emmanuel Church Tuberculosis Class the limit of membership is twenty-five. For the greater part of the time we have had fifteen to twenty members. If more than twenty-five consumptives are to be treated, an additional class should be formed, as the work can be carried on most effectively in small units. In April, 1906, money was offered by ladies outside of Emmanuel parish for extending the work. Instead of increasing our membership, a separate class was organised. Each class has its own directing physician, and a paid friendly visitor, who devotes practically her entire time to the work. Nearly all of our members have been referred from the Massachusetts General Hospital. The cases taken into the class were those to whom other avenues of escape were closed. Either they were too poor or the disease was too far advanced for them to gain admission to the State Sanatorium. Three advanced cases, rejected as unfavourable by the examining physician for Rutland, have recovered from the disease in our class, and have been allowed to return to their work.

Our first member is now the friendly visitor in the Arlington Street Church Tuberculosis Class, which she has served faithfully and satisfactorily since its organisation in April, 1906. I take pleasure in reporting that she insisted on using her first savings to repay the Emmanuel Church Temperance Class the money loaned in her sickness and need. Our second member, who had had a cough for five years, has completely recovered. He is a painter by trade and has not lost a day's work from illness since he graduated from the class a year

ago this spring, and has not lost in weight, and this in spite of the fact that he has been doing inside painting. The third member, whose case was described in detail in my first report, has been working over a year. Through the generosity of a lady of the congregation of Emmanuel Church a little tailor's shop was provided for him on River Street. During the spring and summer he worked with the door and windows always open, so that he might still get fresh air while at his trade. He has not lost an ounce of the forty pounds he gained in the class, and although he works eight to ten hours a day he looks the picture of health.

In all, fifty-two consumptives have been admitted to the class since it was started nearly two years ago. The membership is confined to those in whom the clinical diagnosis has been confirmed either by finding tubercle bacilli in the sputum or by a positive tuberculin test. Deducting fifteen, the number of present members, thirty-seven are left. Thirteen of these were in the third stage of the disease (far-advanced tuberculosis). Three in this group have recovered and are now at work. Seven have died. Four of them were on the roll of the class at the time of their death. Two of the remaining three were discharged for not conforming with the rules, and one is now too ill to attend the class. There were fifteen moderately advanced cases. One was sent to Rutland in an improved condition. Two left the class because they considered themselves well, although the disease was not arrested, and the danger of returning to work was fully explained. One of these had gained twenty-one and a quarter pounds, and the other ten and a half pounds in a single month. These two are the only ones that have withdrawn from the class. Another in the group of moderately advanced cases was unable to continue treatment on account of chronic joint disease (arthritis deformans). The remaining nine (60 per cent.) of the fifteen moderately advanced cases left the class with the disease arrested. In five of these the disease was apparently cured. We had in this series



nine incipient cases, and in seven the disease was apparently cured, and in the other two the disease was arrested. In other words, 75 per cent. of the twenty-four incipient and moderately advanced cases recovered. No one is graduated until the disease is arrested and the member able, in the opinion of the physician in charge, to return to work. Seventeen of our members have fulfilled these requirements and have been graduated. Their average gain in weight was 25.2 pounds. The greatest gain was sixty pounds. This record is held by a negro whose weight had fallen from 200 to 146 pounds during his two years' illness. Eight have been at work twenty weeks or over, and in none has the disease recurred.

*Expenses.*—The expenses of the class from July 1, 1904, to May 1, 1907, were about two thousand dollars. A little more than two hundred dollars was contributed by friends outside of Emmanuel Parish and by the patients themselves. The remaining eighteen hundred dollars was furnished by the church. If the value of a life during the productive years be fixed at two thousand dollars and the cost of a two years' sickness, which is about the average duration of a fatal case of consumption, be placed at one thousand dollars, this would mean that Emmanuel Church, by saving the lives of seventeen persons, has saved fifty-four thousand dollars to the community by an expenditure of two thousand dollars. Six of the seventeen were married men with families depending upon them, and five were the mothers of little children. Emmanuel Church has furnished the facilities for leading the out-of-door life, such as tents, cots, reclining chairs, and blankets. Medical care and nursing have been furnished free. Drs. J. B. Hawes, C. Floyd, and N. K. Wood have been associated with me in the medical work and gave their services.

The families of our members have been taught to help themselves. Sometimes they have been able to let rooms. In several instances we have boarded one of our members in the family of another. This is an admirable



arrangement, because the money paid out for the board of one gives a little available cash each week for a needy family, and thus two members are helped.

The four chief factors in the success of the class have been : First, the patients have spent the nights as well as the days out of doors ; second, they have been kept at rest in the recumbent position, not only until their temperature is normal, but until the symptoms of active disease have disappeared ; third, the system of daily records devised by Dr. C. L. Minor ; fourth, the weekly meeting. Implicit obedience of the rules and regulations has been demanded.

*Fresh Air Day and Night.*—If anyone thinks it is the same thing to sleep in a room with the windows open as to sleep out of doors personal experience will soon convince him of his mistake. All of our members are required to sleep in the open air. This has proved no hardship even in winter. Plenty of blankets and warm clothing keep them comfortable. They frequently tell of the pleasure they find in sleeping out of doors, and some declare they will never sleep in a room again. If the house of the candidate for membership offers him no opportunity for living out of doors, then he must move. The cost of moving is paid out of the class funds if necessary. Our members sleep on flat roofs, piazzas, balconies, or in yards. Protection from rain and snow has been usually secured by small wall tents. These have been furnished free to all members who could not afford to buy them. An ordinary army tent measuring seven feet by seven feet with an extra "fly" is used. This costs \$7.25. But it should be understood that the purpose of the tent is simply to furnish a shelter in time of storm. The ventilation in a tent with the sides fastened down is as bad as in a stuffy room. Our tents are converted into canopies by tying back the ends and rolling up the sides. In fair weather the head of the bed is drawn outside of the tent so that the face will be exposed to continuous currents of fresh air. In stormy or windy weather one or, if necessary, two or more sides

of the tent may be fastened down to keep the rain or snow from reaching the bed. In summer the tent roof shades the patient from intense sunlight.

We use, in some instances, instead of tents, small balconies, built in front of a window, usually on the second story. These balconies are simple platforms protected with a railing. Adjustable awnings and screens keep the balcony dry in stormy weather. A balcony with a neat railing was erected for one of our members by his landlord. It cost \$11.50. The awning was given by a neighbour. Another member had an elevated platform built for \$6.50.

There is an advantage in placing the patient's bed out of doors that I have never seen mentioned. It *removes the source of infection*. With the patient lying in bed out of doors the danger of house infection is eliminated, and even if he is careless in his habits, nature's disinfectants—sunlight, rain, and wind—render him practically harmless. This applies particularly to patients with advanced tuberculosis. It should not be forgotten that Flügge's observations showed that not only the sputum, but the smallest droplets of mucus projected from the mouth in coughing, hawking, and even in speaking, contain tubercle bacilli.

In four (27 per cent.) of the families now represented in our class unsuspected cases of tuberculosis have been found among the children. The disease seems to be chiefly spread by house infection, and the most dangerous are the advanced cases, with persistent cough and abundant expectoration, who live in small, overcrowded, ill-ventilated, and poorly-lighted rooms.

The reason that the death-rate from tuberculosis is higher in Boston than in Berlin or London is probably due to the fact that these cities have had hospitals for advanced tuberculosis, while Boston has had none, except for paupers and criminals.

*The Rest Treatment.*—The chief reason that so many of our moderately advanced cases have recovered seems to lie in the fact that we have insisted on absolute rest

in every instance. Even in cases without fever rest in the recumbent position is continued until symptoms of active disease have disappeared. I find less difficulty in keeping a patient quiet all the time than half the time. The rest treatment simplifies wonderfully the management of the case. It saves the patient from many dangers. Each patient is provided with a comfortable canvas reclining chair. The friendly visitor at her first visit selects the exact spot out of doors where the cot bed and chair are to be placed. The chair must not be moved without permission. Many of the members spend the greater part of the day on their cot beds. This is encouraged. The patients are never allowed to take any of the prescribed rest in a sitting position or in any form of rocking-chair. No sewing or other hand work is allowed, and only a moderate amount of reading. The "cure" consists simply in keeping in the recumbent posture all the time, except members free from fever, who are allowed to dress themselves and to take their meals at the table.

Resting in the open air seems to keep up the muscle tone, for when walking is finally allowed the amount can be rapidly increased without tiring the patient. Attending the weekly meeting of the class involves considerable exertion and gives us a measure of the gain in strength. No one with persistent fever is allowed to attend the class. When applications for membership are received from consumptives with considerable fever, they are told to place their bed out of doors and remain absolutely at rest until their temperature is normal. The promise is held out to them that they will be taken into the class when their fever leaves.

*Food.*—Milk forms the basis of the diet in all the cases. Of course, many say when they enter the class that they are unable to take milk. It is usually an easy task to prove they are mistaken. Milk is nutritious, it is easily digested, and it is cheap. Most of the members take two quarts, a few three quarts, a day. Olive oil is taken after every meal. Many object to the taste of cotton

seed oil, so that its use has been largely abandoned. As the tastes of different races are so different, we have allowed them great freedom in selecting their food. We insist that they shall take plenty of milk, considerable fat in some form, and fresh fruit.

The *record book* is the invention of Dr. C. L. Minor, of Asheville, N. C., and is an essential part of the class method. The patient records his temperature, his pulse-rate, the food he eats, and every other detail of the daily life. He is required to enter in this diary the number of hours he is out of doors and the amount of milk he drinks. The book is inspected by the friendly visitor at every visit and by the physician at the weekly meeting. In my experience I have never found that keeping the records leads to introspection or depression of spirits. It is a great aid in carrying out the details of treatment. The members take pride in keeping neat records. It encourages the members to persevere.

*The Weekly Meeting.*—This is the distinctive feature of the class system. It is held every Friday in a large, cheerful room at the Massachusetts General Hospital. The class meeting is a pleasant social hour for the members. One confided to the friendly visitor that the meeting was her weekly picnic. Made up as our membership is of widely different races and different sects, they have a common bond in a common disease. A fine spirit of *camaraderie* has been developed. They never discuss their symptoms, and are almost invariably in good spirits. Frequently our graduates drop in at the meeting to get weighed and to greet their old associates. The members are weighed each week and their pulse and temperature taken by the friendly visitor, assisted by one of the senior members. The greatest gains in weight are posted conspicuously each week on the blackboard, and the member who remains out of doors the greatest number of hours during the month has his record exhibited. This stimulates a spirit of healthy emulation. One patient was out of doors seven hundred and six hours in a month, an average of nearly twenty-three out

of the twenty-four. Some of the sickest members gain this distinction. The favourable cases that are making rapid progress toward recovery infuse a spirit of hope in all.

After the strength of the member has been tested and increased by carefully prescribed amounts he is graduated and allowed to work. Home treatment has one advantage over the sanatorium in the fact that if health has been regained by leading the out-of-door life at home, it is easy to keep up the hygienic habits after recovery. A place for sleeping out of doors and a reclining chair for resting in the recumbent posture are still available. Our graduates continue to sleep out of doors or with their heads in open windows.

The class method has proved to be economical and efficient. It is hoped that classes will be established in cities where, at the present time, no systematic effort is being made to cure consumption. But it must ever be borne in mind by those in charge of the classes that the necessary conditions in the treatment of pulmonary tuberculosis are, as Dr. Osler has said, "rigid regimen, a life of rules and regulations, a dominant will on the part of the doctor, willing obedience on the part of the patients and friends"—without these and without the spirit of the living creature within the wheels the system will fail.

## HOME TREATMENT OF TUBERCULOSIS IN NEW YORK CITY.

Jan. 8, 1906—Oct. 1, 1907.

*Extracts from an Account of 20 Months' Experience of the Committee on the Prevention of Tuberculosis of the New York Charity Organisation Society. (By kind permission.)*

With the development of interest in the subject of tuberculosis in New York City in recent years, and the

accompanying increase in the number of agencies caring for the tuberculous poor, physicians and charity workers have been more and more impressed that something further was needed in the treatment of this class of the sick than had been heretofore had. While dispensaries for the treatment of tuberculosis were each year increasing in number, and clinic classes becoming larger, at the same time cases of tuberculosis referred to organisations administering relief were becoming more and more frequent. Lack of adequate funds prevented the Charity Organisation Society from providing the special treatment necessary to enable it to co-operate effectively with the dispensaries in the treatment of these cases; the supplying of special diet, the making good of the wage loss resulting from the absence of the bread-winner in a hospital or sanatorium, the paying of rent in lighter and better rooms, were all out of the question without the provision of special means to enable the society to meet these needs.

Accordingly, in the early part of 1906, steps were taken to raise sufficient funds to carry on this work on a large enough scale and for a sufficient length of time to make the experiment worth while.

To the Committee on the Prevention of Tuberculosis, to whom the administration of this fund was entrusted, it seemed that the work might best be done through a sub-committee, composed on the one hand of physicians directly responsible for the larger part of the special tuberculosis dispensary work carried on in the city, and on the other hand of such members of the Charity Organisation Society as could particularly well represent the general policy of the Society in the matter of relief and charitable assistance.

#### PLAN OF OPERATION.

Various methods for carrying on this work were open to the Committee, all containing good points and all open to some objections. It was finally decided that on



the whole the best results were to be obtained through making use, as far as possible, of the agencies already at hand in the Charity Organisation Society and in the tuberculosis dispensaries in the city. This decision was based upon the conviction that the treatment of tuberculosis is a municipal problem, and that, however large the relief fund at the Committee's disposal, the individuals to be directly benefited through financial assistance will necessarily be but a small portion of the total of those requiring such aid. For this reason the Committee felt that it should so plan its work that its influence in the treatment of particular cases would be effective on the larger problems of dispensary and charitable care of consumptives in general.

#### MEDICAL REPORT AS A BASIS.

The Committee has carried on its work in the following manner :—As a basis for the consideration of a case the Committee has required a medical report showing the stage of disease, whether the patient is ambulant or in bed, what the general condition is, the patient's ability to work, the prognosis, whether extra diet is being given and the examining physician's recommendations. These facts were reported on a card schedule especially prepared for this purpose.

The reports were made out by the physicians and nurses at the various dispensaries and were promptly forwarded to the Committee on Relief.

Recommendations as to treatment were, by means of these reports, suggested by an examining physician, who had full knowledge of the physical condition of the patient, and who was himself either a member of the Committee or was working under the immediate direction of a member. It was these recommendations which the Committee tried to carry out so far as practicable, modified as they were by the physician as he came more fully to understand the various aspects of the problems of home relief.



A visitor working full time for the Committee and a visiting trained nurse working half time visited the patients. The Committee itself met once a week and had as its executive, in constant touch with the situation, a secretary who had general supervision and an assistant whose whole time was devoted to the work.

#### GENERAL SCOPE OF RELIEF.

Underlying the Committee's recommendations for the treatment of individual cases have run two main ideas; *the one*, that hopeful cases should be directly aided by the best treatment practicable; *the other*, that the consumptive's family should be protected against infection, and that this could best be accomplished by segregation in a hospital or a country sanatorium. In the case of most of the second stage cases with unfavourable prognosis, and in nearly all third stage cases the Committee has advised hospital treatment and has stood ready to care for the patient's family if the advice were followed. For, it should be borne in mind, that even the scanty and occasional earnings of a consumptive are important to many a poor family, and often objection to hospital care is raised for this reason by father, mother, husband or wife, even though the bread-winning power of the patient has been reduced to the lowest point, if not, indeed, entirely taken away by sickness. In certain exceptional instances, even in this apparently hopeless class, it has been found impracticable to advise hospital treatment; for instance, where a sick mother was needed to keep together a large family depending upon her guiding care. In such cases pains were taken to reduce the danger of infection to a minimum by insisting upon a separate room for the sick one and by frequent visits on the part of the nurse.

Too frequently, however, nothing will induce a bed-ridden patient to follow the Committee's advice and the urging of the district agent to enter a hospital. Dread of hospital, pride against becoming a public charge, reports of the bad accommodations and the low moral

character of many of the patients at some hospitals, all this stands in the way. For such objectors the Committee did not feel that it could go beyond advice as to what was regarded as the proper treatment and the offer of assistance if this advice were followed. These cases were, therefore, "closed" as Committee cases, and left in charge of the proper agencies of the Charity Organisation Society and of the inspecting force of the Department of Health.

### FORMS OF RELIEF.

While it has not been necessary to reject many cases, certain subjects have been withdrawn from consideration as being obviously inappropriate for treatment; in so doing, only the broadest lines have been followed; hopeless third-stage cases, chronic alcoholics, and the persistently incorrigible have been practically the only subjects rejected. The Committee had administered relief in one form or another during the period of its work to 355 different patients and their families; of these 166 were males and 189 females; while in these families there were 762 children 16 years of age and under.

The relief given has been in many different ways. Money frequently has been given to make up the loss to the family of a patient's wages, while he has abstained from work or gone to a hospital or sanatorium for treatment; rent has frequently been paid, especially for more expensive quarters where light and air could be obtained; special diet of milk and eggs have been furnished; clothing and bedding have been supplied; special employment suited to the patient's needs has been obtained; and, in a word, all things done that could help the patient to recovery or prevent the members of his family from becoming infected.

That suitable cases might leave their families to enter hospitals or sanatoria, there has been given to 31 persons relief amounting to \$2,238.76 in the form of "wage loss," to make up the wages lost by the consumptive through ceasing work in pursuance of advice given.

Twenty-five other families have been moved into better rooms, the Committee paying moving expenses and excess of the new rent over the old, or all of the new rent, as the case might be. Rent has been paid for 81 others in their former apartments, where these rooms were suitable and where also there was a separate room for the consumptive.

For 22 others beds have been supplied so that the patient might have a separate bed in a separate room.

Special diet, usually in the form of milk and eggs, has been provided in 154 cases, where the residence of the patient was so far removed from a dispensary or diet kitchen station that the patient was thus practically cut off from this needed form of treatment at these agencies, or where it could not be secured through them.

Clothing has been supplied to 75 patients and sometimes to their families, and was a regular method of relief by the Committee in cases going to hospitals and sanatoria.

Through the aid of the Committee on Employment for the Handicapped several consumptives have been provided with employment of a character that seemed suited to their physical condition, such as doorkeepers, messengers, newsdealers, handy men, &c.

Ten patients have been maintained in whole or in part at pay sanatoria at a cost of \$1,451.43 for periods averaging from one and a half to nine months. This was done because such treatment, though expensive, seemed the only method open of effectually returning these patients to wage-earning power, and the refusal to give such treatment seemed likely to lead to unavoidable physical decline along with the possibility of infection to others of the patient's family.

Thirty-seven other patients, through the instrumentality of the Committee, were sent to the New York State Sanatorium for Incipient Tuberculosis at Ray Brook, to the Municipal Sanatorium at Otisville, and to private sanatoria as free patients, and provided with clothing or such other assistance as was necessary.

Seventy patients have been sent to the country for stays varying from one week to five months, and lasting in 33 cases for three months or more, in 25 cases for two months and a fraction, in 9 cases for one month or one month and a fraction, in 2 cases for one half a month, and in 1 case for one week. This has cost \$5,417.61.

*The Committee's main activities have been in five directions—Home Treatment; the Day Camp; Country Treatment; Sanatorium Treatment; and the Establishment of a Proper System of Tuberculosis Dispensaries:*

#### HOME TREATMENT.

For the hundreds who either will not or cannot go to a hospital or sanatorium, home treatment is essential. Here, notwithstanding the limitations under which we are working in New York City, everything possible must be done for the patient to restore him to his position as a useful member of society, and more especially to protect the members of his family and of the other families living in close proximity to him from the disease. Here, too, must the patient be taught those essentials as to the nature of his disease and the means of combating it which ordinarily would be learned in the sanatorium.

The Committee during the period of its activity has administered Home Relief to 127 families; that is, the patients were treated not in hospitals, sanatorium, or day camps, but exclusively in their own homes.

In every case efforts were made to secure the most sanitary, wholesome and propitious living conditions for the patient. The sunniest and airiest room was always reserved for him, a separate bed was considered essential, and a separate room was the rule with but few exceptions. In a word, everything affecting the life of the patient was carefully supervised—from the social side by the districts of the Charity Organisation Society, from the medical side by the nurses and physicians of the special tuberculosis clinics—and the life of the patient

brought to as high a degree of regularity as the conditions and circumstances permitted.

It appears from this table that with the 127 patients treated exclusively in their homes, excellent results have on the whole been obtained, in view of the obstacles that exist to this method of treatment. For instance, out of 35 incipient cases thus treated, in but 12, or 34 per cent., did the disease progress, while in 23 cases, or 66 per cent., the patient's condition materially improved.

Of the 80 cases originally diagnosed as "moderately advanced," such favourable results naturally could not be expected, yet even here good results have been achieved. In but 39 cases, or 49 per cent., did the disease progress, while in 41 cases, or 51 per cent., the patient's condition improved. In the 12 cases originally diagnosed as "far advanced," the story is, of course, different; of these but one case improved.

Of the total 127 cases, considered irrespective of their original condition, in 62 cases, or 49 per cent., the disease progressed, while in 65, or 51 per cent., the patients improved.

The average treatment per patient has been for 34 weeks, the total cost per patient \$101.63 (about £21), and the average cost per patient \$2.97 (or about 12s. 6d.) per week. In this connection it should be remembered that this cost includes not only the money spent specifically for the patient, but that spent for the family as well.

### THE DAY CAMP.

The experience of others pointed out the "day camp" as an essential part of any adequate scheme of home relief for consumptives. Various plans were considered by the Committee. Through the courtesy of Hon. John A. Bessel, Commissioner of Docks and Ferries, the "Southfield"—an old ferry boat—was put at the Committee's disposal free of all expense, and with the privilege of making such minor alterations and repairs as were necessary for the new and strange use to which

the old boat was to be put. Moored at the end of the dock, at the foot of West Sixteenth Street, in the Hudson River, exposed to the cool summer river breezes, with constantly-shifting scenes furnished by the passing river craft, the decks of the "Southfield," liberally supplied with steamer chairs and hammocks, gave relief from the stifling heat of the tenements to many a poor consumptive who could not go to a sanatorium because too sick or because needed at home. From every point of view, health, happiness, comfort and economy, the boat has been a success. It received only those sent by the associated dispensaries, paying car-fares for those whom investigation by relief societies showed to be too poor to pay these themselves; it gave them an abundance of milk and eggs and bread and butter, adding to this in the last month and a half, a simple cooked dinner. Every patient was carefully watched by the Committee's efficient nurse, Mrs. Helen Smith; their temperature was taken twice a day, and their weight and pulse every morning. This care, added to such advice as the visiting physician might give in individual cases or as the examining dispensary physician might have noted on the patient's record card when sending him to the boat, furnished satisfactory medical oversight.

While the general success of the camp may be thus almost unqualifiedly commended, the attendance was regrettably small. The camp was opened on June 13, 1907, and closed on October 31, 1907. Out of 242 different patients who presented themselves at one time or another during the 141 days in which the camp was in operation, only 87 attended for 20 days or more, owing apparently principally to the fact that the distance was too great from many of the homes and the experiment too novel.

Of the 87 patients who came to the day camp for 20 days or more very satisfactory results have been secured. Out of 27 incipient cases there treated in but 6, or 22 per cent., did the disease progress, while in 21 cases, or 78 per cent., the patient's condition improved.



Of the 47 cases originally diagnosed as "moderately advanced," but 13, or only 27 per cent., progressed, while 34, or 72 per cent., improved.

Even among the cases diagnosed as "far advanced," good results were obtained; out of 13 cases of this kind but 8 were progressive, while 5 of them improved.

A comparison of the results obtained with the 87 day camp patients and the 127 cases treated at home, is of interest.

Out of 127 cases treated exclusively in their homes, 65 improved, and in 62 the disease progressed. Out of 87 cases treated at the camp 60 improved, in 27 the disease progressed. That is, 69 per cent. improved under camp treatment as against 51 per cent. improved under home treatment.

#### COMBINED TREATMENT—HOME AND DAY CAMP.

Out of 87 patients treated at the day camp for a period of 20 days or more, there were 12 who received relief and supervision in their homes by this Committee. In each instance these patients came to us originally because they had been referred to the camp by the clinics, and were able to attend the camp because of the relief which was given them in their homes. Although the number of cases treated both at home and at the camp is very small, it is added here for the comparison with the figures of the two methods taken separately.

Out of 12 cases of this combined treatment 9 improved and in 3 the disease progressed, a per cent. of 75 improved under combined treatment.

It may also be of value in considering the percentages of improved cases to compare also the average cost of treatment:—

The average cost per patient per week for home treatment	-	\$2.97
The average cost per patient per week for day camp treatment	-	2.80
The average cost per patient per week for combined treatment	-	6.53



## SANATORIUM TREATMENT.

As must naturally be expected, both because of a more careful selection of cases and because of better facilities, the sanatorium cases show greater improvement than those treated at home.

It appears that out of 47 cases treated at sanatoria, 39 cases, or 83 per cent., improved, while in 8 cases, or 17 per cent., the disease progressed. The cost to the Committee in this instance, with the exception of the amount expended for 10 pay patients and that expended for out-fits and transportation, went to the families of the patients in their absence at the sanatorium.

The cost of home treatment is very nearly the same as the amount of relief required in the homes of patients in order that they may receive treatment at free sanatoria. This amount, of course, represents the cost to the Committee that makes sanatorium treatment possible, and does not include the cost of treating the patient at the institution. Comparing the results obtained by sanatorium treatment with the results obtained through treatment exclusively in the home, it appears that by the former method 83 per cent. of the cases "improved," while under home treatment but 51 per cent. improved.

Under sanatorium treatment, in but 17 per cent. of the cases the disease progressed, while under home treatment the number of progressive cases was 49 per cent.

## TREATMENT IN THE COUNTRY.

Many charitable persons and interested friends, and nearly always the sufferers themselves, seem to consider that once the city consumptive is taken from his overcrowded tenement and placed in the country the problem is solved. Often it is thereby merely made more complicated. On the other hand, undoubtedly there are many consumptives who will profit greatly by a carefully supervised residence in the country.

In the year 1906 the Committee decided to send to the country such patients as, in its opinion, were suitable

for this kind of treatment. For the most part they were first-stage cases, with good or fair general condition, well instructed, and willing and anxious to follow advice as to treatment and mode of life. They were all patients whose clinic physicians had recommended the country, and whose condition was such that an arrest of the disease, or at least a material prolongation of life, might reasonably be looked forward to if they could be taken away from their tenement homes during the hot summer months, always a critical period for the consumptive.

The first step in planning for this country care of consumptives was to send letters to some 600 boarding-house keepers and farmers living in places within 140 miles radius of the city, asking if they would furnish separate, well-ventilated rooms and give good, wholesome, plain food to a few consumptives whom the Committee desired to maintain in the country during the summer. Of those who were willing and seeming able to offer proper accommodations such were selected as charged not more than \$6 a week, exclusive of laundry. These were visited by the agent of the Society's Committee on Employment for the Handicapped, who took notes as to the situation of houses, location of rooms, food and apparent characteristics of boarding-house keepers, and also made observations on the opportunities for employment. In this manner, after twelve days spent in driving around the country looking up addresses furnished to him, reports were submitted on 28 houses, from which were selected as suitable, 10 houses with accommodation for about 60 patients. *The next thing was to secure a competent physician who would regularly call upon the cases to make physical examinations, watch for the infraction of rules laid down, reiterate recommendations as to the disposal of sputum, and generally give medical care and oversight and hear and determine complaints.* Dr. P. E. Garlock, who, under Dr. Miller, of the Committee, and others, had had previous training in the diagnosis and treatment of tuberculosis as resident physician at Seton Hospital among the very class of

consumptives with whom, for the most part, the Committee was dealing, was selected to do this work, and it was due in no small degree to his judgment and skill that the summer's experiment was carried through with such benefit to the patients and satisfaction to the Committee.

Of the 70 patients sent to the country, 16 were children, and were cared for in various places already favourably known to the Charity Organisation Society, and were not visited by the Committee's physician during their country stay.

It appears out of 48 cases thus treated in the country, out of 10 *incipient cases all improved*, and out of 38 "moderately advanced" cases in but 12, or 31 per cent., did the disease progress; and out of the total 48 cases in but 12, or 25 per cent., did the disease progress, while in 36, or 75 per cent., the patients improved.

A large majority of these patients have come back to the city improved in health, hopeful and realising the value of fresh air, quiet, rest and food, knowing how to protect their families against infection, and determined to do their part in the long struggle toward health. It is, however, the Committee's opinion that ordinarily only a small number of those suffering from tuberculosis and seeking charitable assistance are fitted for residence in the country, and that of these a very much smaller number may safely take such form of treatment without medical supervision.

#### COMPARATIVE RESULTS FROM VARIOUS METHODS OF TREATMENT.

Results Obtained	127 Home	87 Day Camp	12 Combined	47 Sanatorium	48 Country
	Percentage	Percentage	Percentage	Percentage	Percentage
Improved ..	51	69	75	83	75
Progressive ...	49	31	25	17	25

#### CONCLUSIONS ARRIVED AT BY COMMITTEE.

1. That home relief in advanced cases is both unsatisfactory for the patient and dangerous for his family.

2. That, taking into consideration that there are 30,000 tuberculous persons in the New York City tenements, that a system of home treatment and home relief is inevitable, but must be carried out only under the strictest medical and social investigation.

3. That cure in the New York tenements is most difficult, but not impossible, and that the fact that 50 per cent. of the cases treated by the Committee for the past year *improved* is most encouraging.

4. That Day Camps or Sanatoria must in the future play an important part in treating patients who must or will stay at home.

5. That sending patients into the country for cure without the strictest supervision is neither safe nor satisfactory.

6. That Church Classes, whilst obtaining excellent results, must of necessity be very limited in their sphere of usefulness.

7. That special stress must be laid on the extension and perfection of the dispensary system.

8. That every energy, and much more than is now used, must be bent towards educational and preventive measures.

9. That upon the first discovery of tuberculosis in the home every member of the patient's family should be examined and carefully instructed as regards necessary precautions.

10. That co-operation between clinic physicians and social workers fighting against tuberculosis is a matter of primary importance.

11. Too much cannot be said of the results accomplished during our past two years' work in the establishment of co-operative relationship between the several tuberculosis clinics and between these clinics and the social workers. The mutual education has been exceedingly valuable. The difficulties confronting social workers have been brought very clearly and forcibly to the attention of the clinic physicians, and, on the other hand, the problem of medical treatment at public

dispensaries has been newly impressed upon those engaged in the solution of the social problem. This more accurate understanding of their respective problems has brought these two essential forces into very sympathetic relationship and has established the basis for a common standard in the management of dependent families, whose main cause of dependence is tuberculosis.

The report, of which the above are but extracts, is signed by the Committee, of which James Alex. Miller, M.D., is chairman, and Paul Kennaway secretary. We are deeply indebted to Professor Osler for bringing these reports before us.

NOTE:—The cost of food, clothing, &c., being much higher in New York than in this country, any of the above methods of treatment could probably be carried out in Ireland at a much lower expenditure than the figures quoted in the foregoing paper.

# HOME TREATMENT AND NURSING OF PULMONARY TUBERCULOSIS IN DUBLIN

BY SIR WILLIAM J. THOMPSON, M.D., Hon.  
Secretary of Hospitals' Tuberculosis Committee.

Special Hospital and Sanatoria accommodation is so limited in Dublin, as indeed it is all over Ireland, that it occurred to Her Excellency the Countess of Aberdeen, as President of the Women's National Health Association, that some effort should be made to relieve the consumptive poor of the city in their own homes pending the erection of sanatoria. In some large towns—Edinburgh, for instance—where the disease is compulsorily notifiable, there is a special dispensary for consumptive cases, and not only is medical advice and medicine given gratis to patients, but nurses are sent to their homes, and in this way much good is done in the way of teaching the patients and their friends the ordinary precautions against infection, the value of fresh air, habits of cleanliness, the best food available according to the circumstances of the patients.

Bearing this in mind, Lady Aberdeen, on behalf of the Women's National Health Association—wrote to each of the ten clinical hospitals, asking if a representative of the medical staff could be nominated to act on a committee to consider the whole question. Each hospital readily responded, and the following committee—called the Hospitals' Tuberculosis Committee—was formed, viz. :—

Sir John Moore, M.D., representing Meath Hospital, Chairman.

Sir Arthur Chance, M.D., representing the Mater Misericordiæ Hospital.

Michael F. Cox, Esq., M.D., representing St. Vincent's Hospital.

Henry C. Drury, Esq., M.D., representing Sir Patrick Dun's Hospital.

Percy C. Kirkpatrick, Esq., M.D., representing Steeven's Hospital.

J. Lumsden, Esq., M.D., representing Mercer's Hospital.

Joseph O'Carroll, Esq., M.D., representing Richmond, Whitworth, and Hardwicke Hospitals.

Alfred R. Parsons, Esq., M.D., representing Royal City of Dublin Hospital.

George J. Peacocke, Esq., M.D., representing Adelaide Hospital.

Sir William J. Thompson, M.D., representing Jervis Street Hospital, Hon. Secretary.

Her Excellency the Countess of Aberdeen, President of the Women's National Health Association.

This Committee considered the advisability of establishing special dispensaries for consumptive cases in connection with the hospitals.

The Committee decided on a plan of voluntary notification and home treatment, which works out as follows :—

A special Register is being kept at each hospital of all the cases (both extern and intern) of tuberculosis of all kinds attending the hospital.

The Medical Staff of each hospital ask the patients or their friends whether they wish a nurse to go and visit their homes free of charge, and tell them they can obtain the services of such a nurse by posting a stamped and filled up post card, which is presented to them, addressed to :—"Nursing Department of the Women's National Health Association." On receipt of this card a nurse is despatched to the patient's home, with instructions to give all necessary attention to the patient.

For statistical purposes, and for the general informa-



tion of the Committee, a form of inquiry was drawn up, to be filled in by the nurse and returned to the Hon. Secretary. The Women's National Health Association placed at the disposal of the Hospitals' Tuberculosis Committee two Jubilee Nurses specially trained for this work. It was understood that cases of pulmonary tuberculosis were to be under their special care—other kinds of tuberculosis needing nursing being passed on to the regular Jubilee Nurses working in the city.

This scheme was heartily taken up by the ten clinical hospitals, and came into working order about the middle of February. On the 22nd of May a report was laid before the Hospitals' Tuberculosis Committee of the first three months of its working, and the followning synopsis will show how gratifying were the results:—

During the three months 106 patients were visited in their own homes by the nurses. Of these, 73 were notified from the hospitals, and the remaining 33 cases were sent to the Women's National Health Association by patients or their friends who had heard of the nurse's visits to others, and who wanted her to come to them also.

There were 7 deaths, 5 at the patients' homes, and 2 in the Union Hospitals—the immediate cause of one death was heart disease.

Two patients were admitted to the Newcastle Sanatorium.

Three patients are waiting for admission to the Newcastle Sanatorium.

One patient was sent to Rostrevor Sanatorium.

Four patients went to friends in the country.

Eight patients improved so much that they were able to resume their ordinary work.

Twelve patients were admitted to the Union Infirmary (four to the North Dublin and eight to the South Dublin).

Seven patients were admitted to the Hospice for the Dying.

Five families removed to more healthy and sanitary homes.

Four cases attended, had previously been to Newcastle Sanatorium.

There were a large proportion of the cases far advanced when first seen by the nurse. In most cases the families were earning fair wages and were fairly comfortable before attacked by the disease. Out of the total number the sexes were fairly evenly affected—men being principally affected between the ages of twenty and thirty, and women between the ages of thirty-five and forty-five years.

In almost all cases the nurse found one or more other members of the family already suffering from the disease—usually in an early stage. These were promptly put under proper medical treatment.

It was found that in cases of one or both parents being consumptive quite a number had already lost one or more children from tubercular meningitis. Roughly speaking, there were an average of five of a family for each case attended.

The nurses state that the great difficulties they have to contend with are :—

1. The extreme poverty of the patients.
2. The dirt of the rooms and houses.
3. The absolute want of any ventilation, and
4. The fact that there is no precaution taken against infection.

Their visits have effected much in regard to all these points. They have found the patients grateful for the visits, and their friends eager to be instructed how to use necessary precautions to prevent infection, and how to prepare more nourishing food, &c. They have been anxious to obtain sputum flasks, and have been willing to pay part of their cost when necessary, and they are trying to keep their houses cleaner.

As regards the poverty, the nurses have been greatly helped by the Samaritan Committee of the Dublin Branch of the Women's National Health Association. This Committee supplies, where necessary, milk, meat, eggs, &c.; also blankets and clothing and soap; sometimes additional beds, so that the patients may sleep alone; and communicating with other charitable and philanthropic societies in cases where these can be of assistance.

These societies have readily helped in the work of relief wherever this was possible. The nurses testify to the great charity shown by the Dublin poor towards each other, and without which help many of these patients could not have lived without going into the workhouse.

The nurses got 38 rooms disinfected, and distributed 46 sputum flasks. The nurses report that in quite a number of cases there has been a marked general improvement in the condition of the patients, and in all cases there has been a great change in the condition of the room or house and its surroundings.

Remembering that this report represents only three months' work it is full of encouragement for future developments along the same line.

POST CARD FOR VOLUNTARY NOTIFICATION.

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If this Card be posted a Nurse will visit the Patient without  
expense.

.....*Hospital.*

*No. in Hospital Register*.....*190...*

*Please visit* .....

*at*.....

.....*Floor*.....*Room.*

*Signed* .....

# PAGE FROM HOSPITAL REGISTER.

Date	No.	NAME	Age	S M.W.	ADDRESS	Family	State and Progress of Case.

## APPENDIX C.

### SCHEDULE OF INQUIRY REGARDING DISPENSARY PATIENTS.

#### TO BE FILLED UP BY NURSE :

1. Name..... Age..... M. S. W.
2. Address .....
3. Situation of House, or Room (basement, ground floor, &c.)?.....  
.....
4. Occupation.....
5. Able to Work? . . . . .
6. Is Patient confined to bed?.....
7. How long ill?.....
8. Number of Inmates of Room (a) by day?.....  
(b) by night?.....
9. Size of Room (large, medium, small)?.. . . .
10. General Condition of House or Room?.....
11. Number of Windows? .....Can they be opened?.....  
Are they kept open (a) by day?.....(b) by night?.....
12. Is there a Fireplace? .. . . .
13. Has the Patient a separate Bed?.....
14. Where are Clothes washed? .. . . .
15. How long resident in present Home?.....
16. State previous Addresses of Patient |  
within past two years | .. . . .
17. Has any other case of Tuberculosis occurred in the House, if so give  
particulars?.. . . .  
.....  
.....
18. Present Health of other {  
members of Household? { .. . . .  
Causes of any Deaths in the Family?.....
19. What measures have {  
been taken to disinfect? { .. . . .
20. Family Dietary? .. . . .
21. General Conditions (well-to-do, badly off)?.....
22. Approximate Income of Household from all sources?.....  
Number and ages of individuals depending on such Income?.....
23. If receiving any assistance?.....
24. What Doctor has been attending you?.....  
*Signed*.....*Nurse.*  
*Date*.....









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## Date Due

[illegible]

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